

Make



ORIGAMI

IN THE MODERN WORLD

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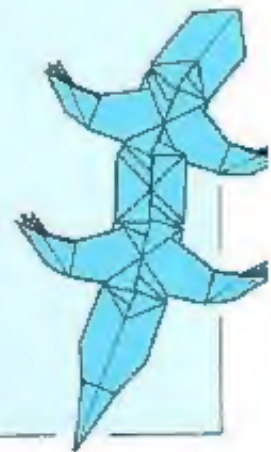
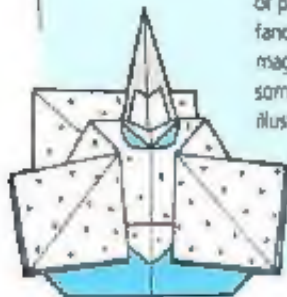
INTRODUCTION

Origami has become an international art. Every year the world of origami grows bigger; its popularity has grown not only in Japan but worldwide. The word 'origami' is now understood in any country in the world, and many people from many different countries practice it, many of them creating their own original models and exchanging ideas with other enthusiasts worldwide.

Anyone can enjoy origami, regardless of age, sex, nationality and language. Its characteristics are instrumental in stimulating and enriching the imagination, encouraging creative ideas and a geometrical way of thinking. Consequently, it has come to be adopted as teaching material in Japan and many other countries. Origami is also effective in the medical world as a means of rehabilitation, and it makes a very good pastime for those enjoying their retirement.

This book has been designed to take you, the folder, from the very first, easy steps, to the much more intricate methods used to produce many original designs. By all means, aim to copy the models exactly as they appear in the diagrams at first, but what is important is your own personal touch and how you develop the ideas.

You may be wondering what sort of paper to use for the origami projects. Most of the models in this book are folded from a single square of paper, although in a few cases you will need more than just one, or you will need a rectangular piece of paper. All kinds of paper can be folded into origami, but try to find a type that suits you best. Packets of origami paper, coloured on one side and white on the other, can be obtained from department stores, art and craft shops, toy shops, stationery shops and oriental gift shops. However, any type of paper (as long as it folds well) is suitable for origami. Why not try using fancy gift wrapping paper, or you could even cut a few pages out of a colour magazine! Your paper does not have to be coloured on one side, but it can help some origami models look very attractive and can make some of the illustrations easier to follow.



HELPFUL TIPS

Before you try any of the procedures or projects in this book, here are some very helpful tips that will make origami easier:

- Try to obtain the kind of paper most suitable for the origami you plan to fold, as this will help enhance the finished model.
- Before you start, make sure your paper is the correct shape.
- Fold on a smooth flat surface, such as a table or book.
- Make your folds neat and accurate.
- Press your folds into place by running your thumb nail along them.
- Do not panic if your first few attempts at folding are not very successful. With practice you will come to understand the many ways in which a piece of paper behaves when it is folded.
- In the diagrams in this book, the shading represents the coloured side of the paper.
- Look at each diagram carefully, read the instructions, then look ahead to the next diagram to see what shape should be created when you have completed the step you are working on.
- You will find it easiest to work your way through from the beginning of this book to the end, as some of the folding projects and procedures in later sections are based partially on previous ones. However, if you are an experienced paperfolder and can follow origami instructions without too much help, you can, of course, select any design as a starting point.
- Above all, if a fold or a whole model does not work out, do not give up hope. Go through all the illustrations one by one, checking that you have read the instructions correctly and have not missed an important word or overlooked a symbol. If you are still unable to complete the model, put it to one side and come back to it another day with a fresh mind.

SYMBOLS AND BASIC FOLDING PROCEDURES

The symbols used in this book have been developed by the Nippon Origami Association, and it is important that you understand them as they show you the direction in which the paper should be folded. Look very carefully at the diagrams to see which way the dashes, dots and arrows go over, through and under, and fold your paper accordingly.

If you are new to origami and are folding for the first time, you may be worried about understanding all the paperfolding jargon. If this is the case, we suggest that, before trying any of the origami projects, you take a few squares of paper and study the following symbols and folding procedures. In this way, you will get to know the most basic points about origami. After spending a few minutes learning them, you will be able to fold from almost any book on origami, even if you cannot understand the language in which it is written.

VALLEY FOLD



- 1** This is the simplest and most common technique to be found in origami. A valley fold (fold forwards or in front) is shown by a line of dashes and a solid arrow showing the direction in which the paper has to be folded.



- 2** To make a valley fold, hold down the top edge of a square of paper. Lift the bottom edge ...

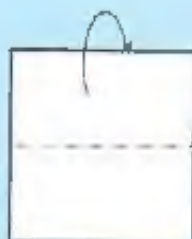


- 3** ... and bring it up to meet the top edge. Keeping the edges together, run your forefinger down the middle of the paper to the bottom edge.



- 4** Run your forefinger along the bottom edge to both sides, thereby completing the fold. If you turn the paper sideways on and unfold it a little, you can see the shape resembles a valley, hence the name of this fold.

MOUNTAIN FOLD



- 1** A mountain fold (fold backwards or behind) is shown by a line of dots and dashes (usually a long dash followed by two dots) and a hollow-headed arrow. As in the valley fold, the arrow always shows the direction in which the paper has to be folded.



- 2** To make a mountain fold, hold the bottom edge of a square of paper. Bend the top edge backwards ...

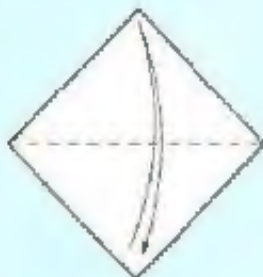


- 3** ... and take it down to meet the bottom edge.



- 4** Keeping the edges together, run your thumb up the middle of the paper to the top edge. Run your thumb and fingers along the top edge, thereby completing the fold. If you turn the paper sideways on and unfold it a little, you can see the shape resembles a mountain, hence the name of this fold.

FOLD AND UNFOLD



- 1** An arrow which comes back on itself means 'fold', press flat and unfold the paper back to its previous position.



- 2** Turn a square of paper around to look like a diamond. Valley fold is in half from bottom to top, thereby making a triangle. Press it flat.

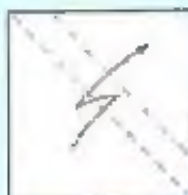


- 3** Unfold the triangle completely.

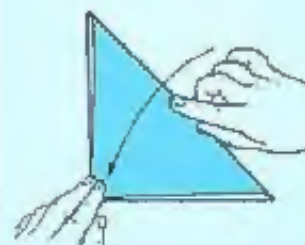


- 4** This is the completed fold and unfold. A faint, solid line represents an existing fold-line, i.e. one that is the result of a previous step.

STEP FOLD



- 1** A zigzagged arrow drawn on top of the diagram means 'Fold the paper in the direction shown by the arrow'. A step fold is made by pleating the paper in a valley and mountain-fold, so it becomes like a step.



- 2** To create a step fold, valley fold a square of paper in half from top right to bottom left, thereby making a triangle.



- 3** from the bottom left-hand corner, valley fold the top layer of paper up, so

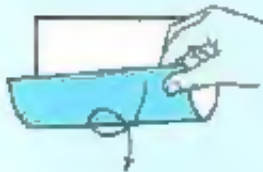


- 4** it lies over the triangle's longest side. Press it flat, thereby completing the step fold.

TURN OVER



- 1** A looped arrow means ...



- 2** 'Turn the paper (or model) ...



- 3** over in the direction shown'.

TURN AROUND



- 1** Two cycling arrows mean ...

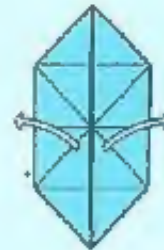


- 2** 'Turn the paper (or model) around into the position shown in the next diagram'.



- 3** This should be the result.

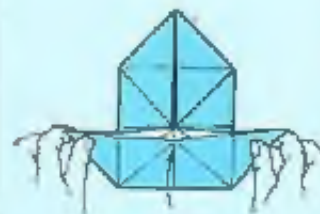
PULL OUT



- 1** Two hollow arrows, both with long tails, mean 'Pull out'.



- 2** These symbols are used when layers of paper or points have to be pulled out ...



- 3** in a certain direction.

INSERT



1 A single hollow arrow with a long tail means "insert".



2 This symbol is used when a flap or point has to be inserted either into a pocket...



3 or underneath a layer of paper.

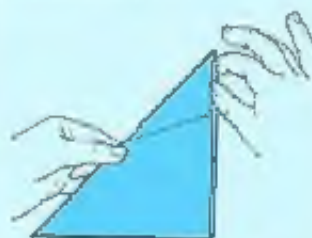
INSIDE REVERSE FOLD



1 Inside reverse folds are very easy to do. After valley and mountain folds, they are the most commonly used technique in origami. An inside reverse fold is indicated by a wavy arrow and a mountain fold-line.



2 To create an inside reverse fold, valley fold a square of paper in half from top left to bottom right, to make a triangle. To prepare for the inside reverse fold, valley fold the top right-hand point of the paper at the required angle. Press it flat and unfold it.



3 Insert your thumb between the right-hand layers of paper and place your forefinger on the triangle's ridge.



4 Draw back your forefinger, at the same time pushing down on the ridge to change it into a valley fold.

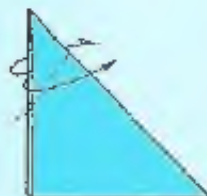


5 Using the fold-lines created in step 2 as a guide, pull the point down inside the model as shown.



6 Press the paper flat, thereby completing the inside reverse fold. This technique is so named because the paper is folded inside and a ridge is reversed from a mountain to a valley fold.

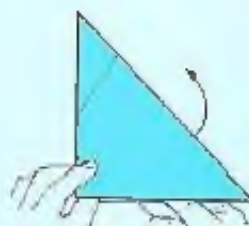
OUTSIDE REVERSE FOLD



1 An outside reverse fold also requires a little preparation beforehand. This technique is indicated by solid and hollow-headed arrows, and valley and mountain fold-lines.



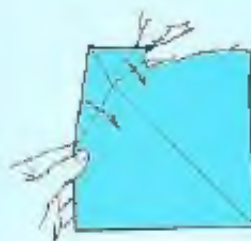
2 To create an outside reverse fold, valley fold a square of paper in half from top right to bottom left, to make a triangle. Valley fold the top left-hand point of the triangle over at the required angle. Press the point flat, then unfold it.



3 Separate the layers of paper.



4 taking one to the front and one to the back.



5 Press down on the fold-lines made in step 3, to convert them into valley folds, at the same time.



6 bringing the top point forwards.

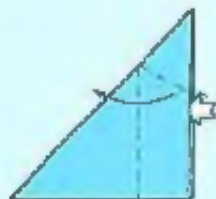


7 Mountain fold the paper in half along the middle fold-line.

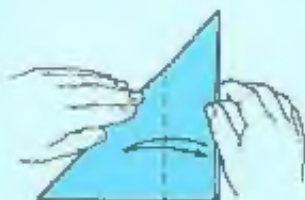


8 Press the paper flat, thereby completing the outside reverse fold. This technique is so named because the paper being folded moves outside the rest of the paper and fold-lines are reversed.

OPEN AND SQUASH



1 The open and squash technique is not at all tricky to do. As open and squash folds can come in many shapes and disguises, it is important to learn this technique carefully. An open and squash is shown by a hollow arrow with a short, indented tail.



2 Valley fold a square of paper in half from top left to bottom right, to make a triangle. Valley fold the right-hand side of the triangle over towards the left (the exact position of the fold is not important). Press the side flat and unfold it.



3 Lift the side up along the fold-line that has just been made. Insert your fingers between the layers of paper.



4 Start to open out the layers and, with your other hand,...



5 squash the point down neatly into this shape. Press the paper flat to complete the open and squash technique, which is so named because layers of paper or a pocket are opened out and squashed down.

ENLARGE



1 A swollen arrow with a pointed tail shows that the following diagram...



2 is drawn to a larger scale.



3 To clarify a tricky (or detailed) procedure, an enlargement of it is illustrated inside a circle.

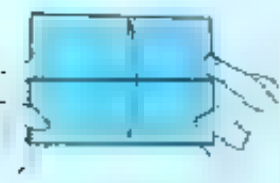
FOLD OVER AND OVER



1. A curved arrow drawn on top of a square means: fold the paper over and over again in the direction shown by the arrow. Each fold-line represents one "over" move.



2. Valley fold the bottom edge of a piece of paper up to a point that is about one-third of the distance to the top edge.

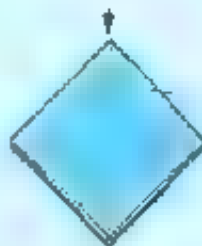


3. Valley fold the bottom "folded" edge up to meet the top edge.



4. Press the paper flat, thereby completing the fold over and over square.

SINK



1. This technique involves pushing a point between four layers of paper. A sink is indicated by a solid arrow with a mountain fold-line or with mountain and valley fold-lines if the sink is to be a multi-sink.



2. The starting point is a preliminary fold (see page 80). First mark the fold-line by folding down the top point in a valley fold. Press it flat and unfold it.



3. Unfold the paper and flatten the central point. Crease the four sides of the square into mountain folds, so it looks like a "table top".



4. Push down on the middle of the square, at the same time pushing in the sides so they collapse towards the middle. Keep on pushing until the square fully collapses, thereby inverting the point inside the model.

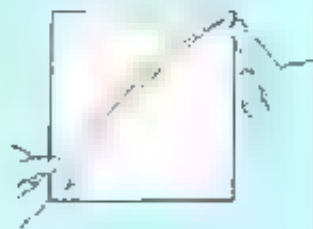


5. Here is the completed sink.

HOW TO MAKE 'A' SIZED PAPER

In paper manufacturing, paper sizes are classified as A, B or C. A-series sheets of paper are rectangular in the proportions of 1 : $\sqrt{2}$: 1. The most common A4 paper is readily available and used for a whole range of printed material. Some of the projects in *New Origami* start with A-sized paper, here are two quick and easy methods to make an A-sized rectangle.

From a Square



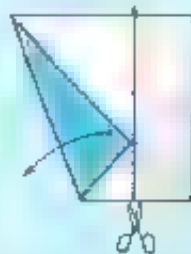
1 Valley fold a square of paper in half from bottom left to top right thereby making a triangle. Press it flat and unfold.



2 Valley fold the left-hand side over to lie against the diagonal fold-line.



3 Valley fold the right-hand side over along a vertical line as shown. Press it flat and unfold.

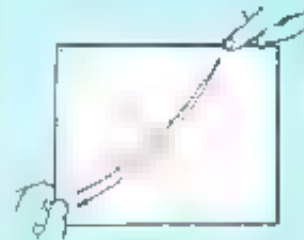


4 Cut along the 'incision' made in step 3 and discard the shaded oblong of paper. (The new symbol of a pair of scissors and a solid line means 'Cut the paper'. The solid line shows the position of the cut.) To complete, open out the paper into



5 an A-sized rectangle.

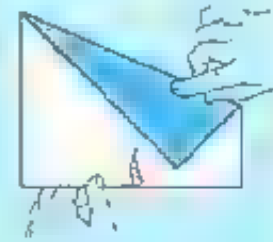
From a Rectangle



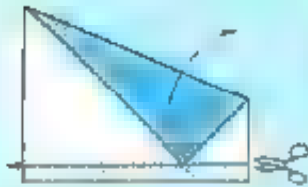
1 Place the rectangle sideways on valley fold the left-hand side up to meet the top edge. Press it flat and unfold it.



2 Valley fold the top edge over to lie against the diagonal fold-line.



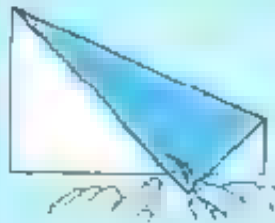
3 Valley fold the bottom edge up along a horizontal line as shown. Press it flat and unfold it.



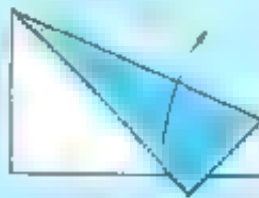
4 Cut along the fold-line made in step 3 and discard the shaded strip of paper. To complete, open out the paper.



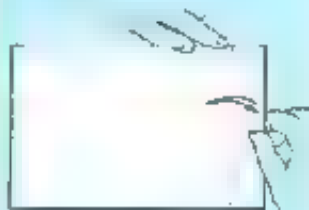
5 An A-sized rectangle
In step 2, the top right-hand corner protrudes beyond the bottom edge.



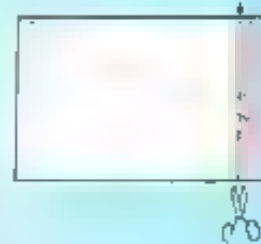
6 Valley fold the protruding corner up to where the sloping and bottom edges intersect. Press down on the paper only a little as shown. Unfold it.



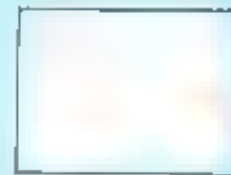
7 Open out the paper.



8 Valley fold the right-hand side over along a vertical line, as shown. Press it flat and unifold it.



9 Cut along the fold-line made in step 8 and discard the shaded strip of paper.

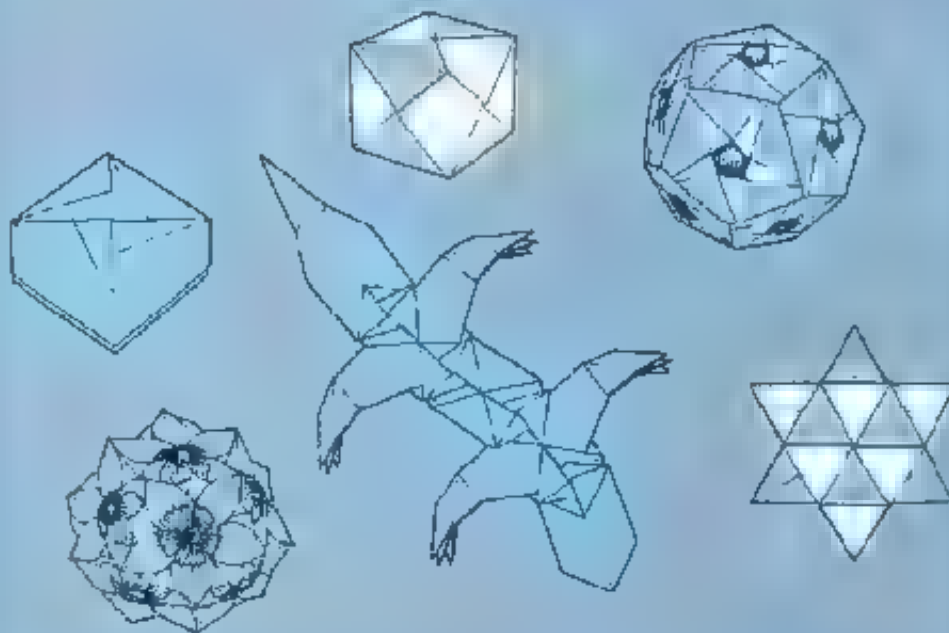


10 The product is an A-sized rectangle.

MODULAR ORIGAMI

Modular origami consists of folding non-representational shapes or units and fitting them together to build more complex constructions. In the hands of an expert, such as Toriyama Kuzo, it can be the means of creating veritable boxes using many sheets of paper.

Traditional examples of modular origami, such as the kusudama seen on page 16, may be glued together. Present-day paperfelters prefer their modular constructions to be held together by interlocking. The models that follow use both techniques.

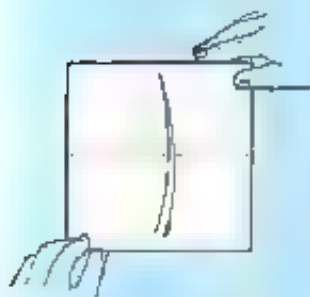


CUBE

TRADITIONAL

Once this cube has been mastered, it is a very easy item to use as a construction piece when making solid geometrical shapes, such as the soma cube on page 41.

MAKING A CUBE FROM A SQUARE
1. 2. 3. 4. 5. 6. 7.



1 Valley fold one square in half from bottom to top. Press it flat and unfold it.



2 Valley fold the top and bottom edges to meet the middle fold-line. Press them flat and unfold them.



3 Valley fold the top left-hand corner over to meet the adjacent fold-line. Repeat this step with the bottom right-hand corner.



4 Once again, valley fold the top and bottom edges to meet the middle fold-line.



5 Valley fold the right-hand side down, so that it lies along the bottom edge. Valley fold the left-hand side up so that it lies along the top edge. Press them flat and unfold them.



6 Repeat step 5, but tuck the right-hand side underneath the lower layer of paper and the left-hand side underneath the upper layer of paper, so.



7 completing one unit of the cube. Now make five more units in the same way.



- 8** Turn all the units over. Valley fold the top right- and bottom left-hand triangular points in as shown. Press them flat and unfold them.

Joining the Units Together
As a help during assembly, label the units from A to F, with a pencil.



- 9** Turn all the units over. Tuck unit B into unit A from the right-hand side.



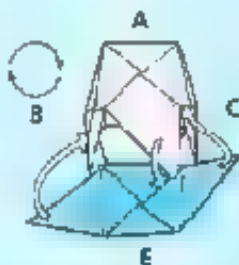
- 10** Tuck unit C into unit A from the left-hand side.



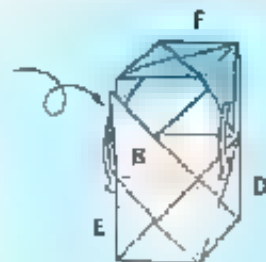
- 11** Tuck unit A into unit D from above. Tuck unit D into units B and C, so that



- 12** the unit becomes three-dimensional.



- 13** Turn the units around. Tuck unit A into unit E. Tuck unit E into units B and C.



- 14** Turn the units over. Tuck unit D into units D and E.



- 15** Finally, tuck units B and C into unit F thereby



- 16** completing the cube.

PENTAGON COASTER (DODECAHEDRON)

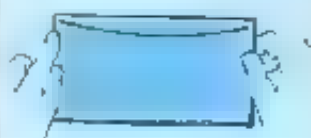
FRANCIS ON

These models are not difficult to make, but the folding should be as accurate as possible, and you will need patience to produce the necessary number of units.

10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100



1 valley fold one square in half from top to bottom, thereby making a shape that in origami is called the book fold



2 valley fold the book fold in half from side to side, but do not press the paper completely flat



3 Press down on the paper only a little at the middle point, then unfold it



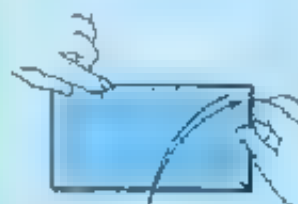
4 valley fold the left-hand side over to meet the fold mark made in step 3. Again, do not press the paper flat, but only mark the quarter point. Return the side to its original position



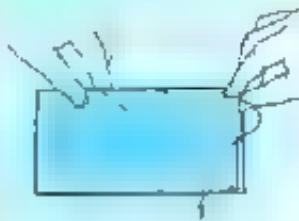
5 valley fold the right-hand side over to meet the fold mark made in step 4. Again, do not press the paper flat, but only mark the paper as shown. Return the side to its original position



6 valley fold the left-hand side over to meet the fold mark made in step 5. Once again, do not press the paper flat, but only mark the paper as shown. Return the side to its original position



7 valley fold the top edge down on a line between the fold mark made in step 6 and the bottom right hand corner. Press it flat and unfold it.



8 Along the fold-lines made in step 7, make reverse fold the top edge thereby

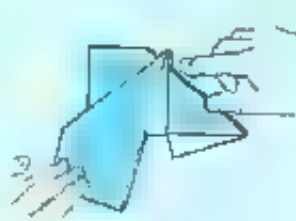


9 completing one unit. Now make 99 more units in the same way

Joining the Units Together



10 Take five units and tuck one unit inside another as shown



11 This should be the result



12 Again, fold the top unit's triangular points down inside the adjoining unit, thereby locking them both together

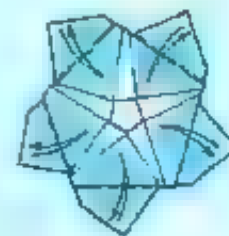


13 Continue tucking and locking the five units together carefully until

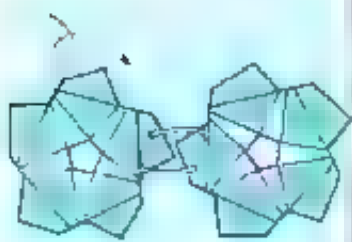


14 you have built up this pentagon coaster design

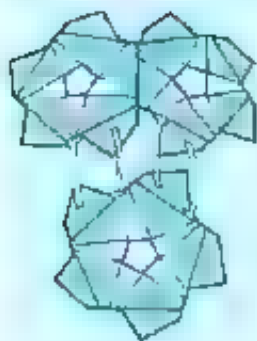
Dodecahedron Assembly



15 Repeat steps 8 to 14 with the remaining 55 units, thereby making a further 11 pentagon coasters. valley fold the pentagon coaster's flaps over as shown. Press them flat and unfold them. Repeat on all the other coasters.



16 Turn all the coasters over.
Take two coasters and rack them together
as shown.



17 When a third coaster is buckled into
the 6.



18 The form of the final structure will
start to emerge. Make a total of four
triple-module units by joining the others
in the same way.



19 Join three triple-module units by
buckling flaps into pockets.



20 Add the remaining unit, thereby



21 Completing the dodecahedron.

SIX-PIECE HARLEQUIN STAR

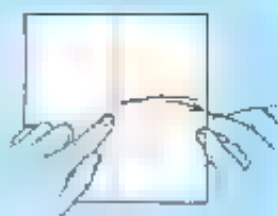
FRANCIS OW

Made out of shiny metallic gift paper, this star would make an ideal Christmas decoration.

Materials: 12 squares of gift paper, 12 squares of tissue paper



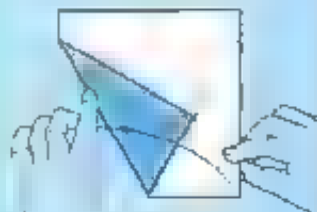
1 valley fold one square in half from side to side. Press it flat and unfold it.



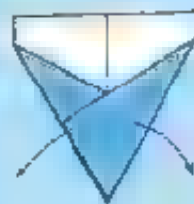
2 valley fold the right-hand side over to meet the middle fold-line. Don't press the paper flat, but only mark the quarter point. Return the side to its original position.



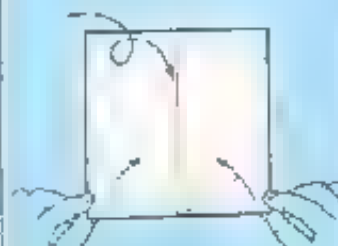
3 Starting in the middle of the bottom edge, valley fold the bottom left-hand corner over to meet the fold-mark made in step 2.



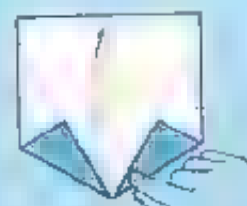
4 valley fold the bottom right-hand corner over so that it lies on top.



5 as shown. Unfold the paper completely.



6 Turn the paper over, valley fold the bottom left-hand edge over to meet the adjacent fold-line as shown. Repeat this step with the bottom right-hand edge.



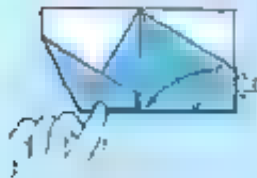
7 valley fold the paper in half from bottom to top.



8 Using the existing crease as a guide, valley fold the left-hand sloping edge over to lie along the middle fold-line, at the same time



9 Pulling out and flattening the two left-hand corners



10 This should be the result. Repeat steps 8 and 9 with the right-hand sloping edge, thereby making a triangular point.



11 Mountain fold the top edge behind on a line where the sloping edges and the triangular point's sides intersect



12 Valley fold the right-hand flap of paper over the point's adjacent side. Mountain fold the left-hand flap of paper behind as shown, thereby



13 To repeat this, use one of the harlequin stars. Now make five more such units.

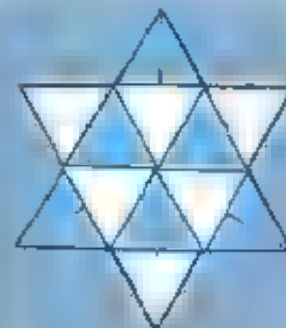
Joining the Units Together



14 Turn all the units over. Tuck a white unit and a coloured unit together as shown, thereby locking them together.



15 Joining a unit in a clockwise direction will alternating between white and coloured units, continuing until you lock the units together carefully.



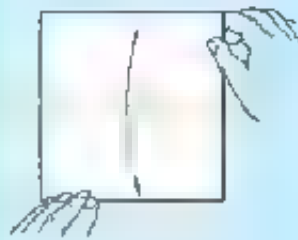
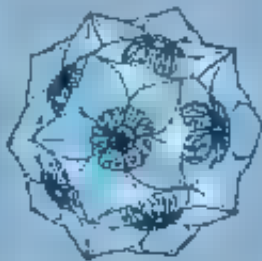
16 This you have built up a complete harlequin star design.

KUSUDAMA

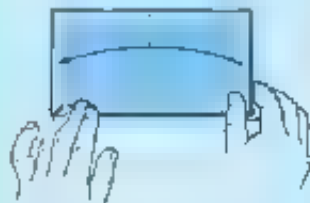
TRADITIONAL
INTRODUCED BY
MEGUMI BODLE

In pre-modern Japan (about AD 500 to 600), it was the custom on 5 May to collect wild flowers and to sew them around a pot-pourri of herbs. This sweet-smelling decoration (kusudama) was then given as a gift, signifying the wishes of the giver that the receiver should enjoy good health. Nowadays, the kusudama is made from paper or origami flowers. 5 May is celebrated as Children's Day, and the wishes of good health are passed on to children.

THE KUSUDAMA IS MADE FROM PAPER
AND ORIGAMI FLOWERS.



1 valley fold one square in half from top to bottom



2 valley fold the book fold in half from right to left



3 lift the top left-hand layer up along the middle fold line. Open out the paper and, with your free hand,



4 squash it down neatly into a triangle



5 Turn the paper over. Repeat step 3 with the top right-hand layer of paper



6 Repeat step 4, thereby making a shape that in origami is called the waterbomb base



7 valley fold the top right-hand flap of paper over to the left, like turning the page of a book.



8 Open out the top left-hand flap and squash it down neatly into the position shown in step 9.



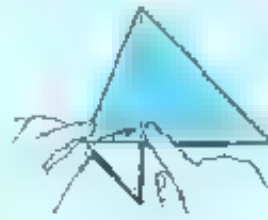
9 valley fold the squashed flap in half from left to right.



10 Repeat steps 8 and 9 with the remaining two left-hand flaps. But do not valley fold the last squashed flap in half, instead.



11 valley fold all the squashed flaps in half both right to left.



12 valley fold the front flap's lower sloping edge over so that it lies along the vertical fold-line.



13 valley fold two left-hand flaps over towards the right.



14 valley fold the front flap's lower sloping edges over, so they lie along the vertical fold-line.



15 Valley fold the top right-hand flap over to the left.



16 valleyfold the front point up as far as it will go



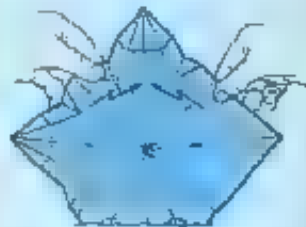
17 valleyfold three left-hand flaps over towards the right. Repeat steps 14, 15 and 16 with the front flap



18 Valley fold three left-hand flaps over towards the right. Repeat steps 12, 15 and 16. Press the paper flat.



19 Unfold the paper completely. Press down on the paper's middle with the coloured side on top, thereby making it become bowl-like in appearance



20 Position the paper as shown. Starting with the top point and using the existing fold-lines, step fold the middle of the top right and left edges behind to the middle



21 Mountain fold the sleeping sides behind



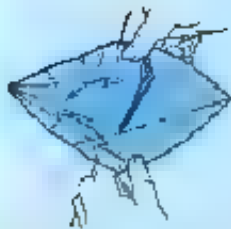
22 valley fold the top point down along the line of the horizon (an edge)



23 valley fold the upper section of paper in half from left to right.



24 Step fold the middle of the left-hand point's two edges behind, in effect repeating step 20. Now repeat steps 21, 22 and 23.



25 Repeat steps 14 and 15 with each unit, bringing the corners together.



26 Tuck the point down into the model along the line of the horizontal edge, thereby



27 continuing one petal. Repeat steps 25 and 26 with the remaining 13 squares.

Joining the Units Together



28 Glue five petal units together by means of their vertical edges as shown thereby



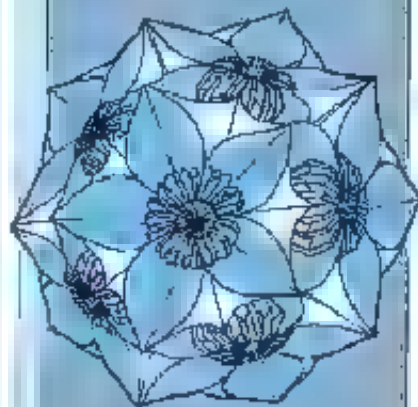
29 making one flower. Repeat step 28, thereby making a further 11 flowers.



30 Glue five flowers into a ring by the tips of their petals as shown. Next, glue another flower into the middle of the ring, thereby completing one half of the kusudama.



31 Make the other half by repeating step 30 with the remaining six flowers. Glue the two halves of the kusudama together as shown.



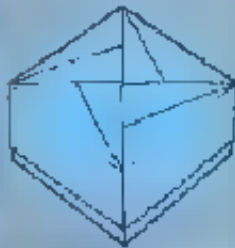
32 and the kusudama is complete.

DECORATIVE BOX

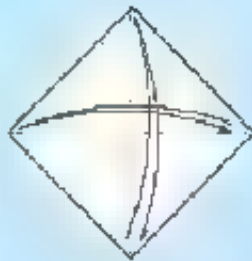
TOMOKO FUJIE

For a creative challenge, try folding the following units in a variety of colours and joining them together in a different way from the one illustrated.

UNIT: 10cm (4in) OF PAPER BUT AT LEAST 15cm (6in) WIDE



Lid



1 Turn one square around so look like a diamond. Valley fold the opposite corners together to form at least the diagonal fold-lines, then open up again.



2 Valley fold the bottom corner into the middle. Do not press the paper completely flat, but just press down on it a little. Return the corner to its original position.



3 Valley fold the top corner down to meet the fold mark made in step 2, thereby making a coloured triangle.



4 Valley fold the right and left-hand corners in as shown.



5 Unfold the coloured triangle.



6 Valley fold the paper in half from bottom to top.



7 Valley fold the bottom edge up to meet the fold mark made in step 2. Press it flat and unfold it.



8 Valley fold the paper in half from top to bottom.



9 Valley fold the right-hand side over to lie along the horizontal fold-line thereby making a small triangle. Flatten flap and unfold it.



10 Undo the fold-lines made in step 9. Flatten the entire model. Turn the paper down inside the model as shown thereby making an inner flap.



11 Repeat step 9 but do not unfold the triangle.



12 Valley fold the triangle's bottom edge over to lie along the right-hand sloping side thereby making a small triangle.

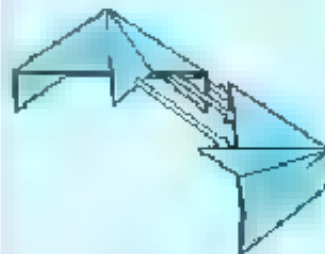


13 Separate the front layer from the back layer so the model becomes three-dimensional.

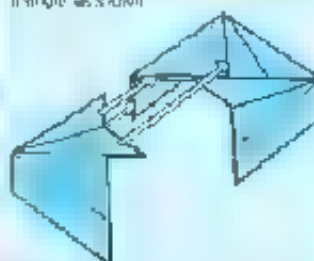


14 Valley fold the inner flap across to the other side so that it lies underneath the small triangle as shown, thereby completing one unit of the set. Now make three more units in the same way.

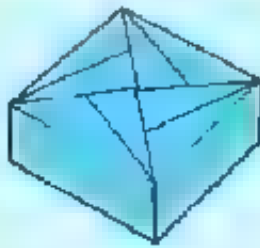
Joining the Units Together



15 Insert one unit deep into the top pocket of another, thereby tucking its inner flap (see steps 11 and 14) between the paper's sloping layers, at the same time arranging its small triangle (see step 12) to fit under the other unit's small triangle as shown.



16 Repeat step 15 with the remaining units.

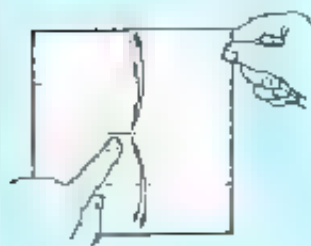


17 Here is the completed fold

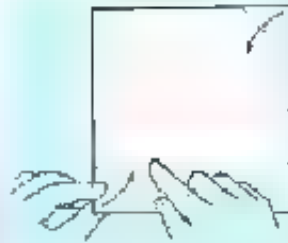
Base



18 Valley fold one square in half from bottom to top. Press it flat and unfold it.



19 Valley fold the top and bottom edges to meet the middle fold-line. Press them flat and unfold them.



20 Valley fold the top right-hand corner over to meet the adjacent fold-line. Repeat with the bottom left-hand corner.



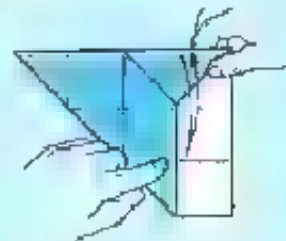
21 Once again, valley fold the top edge down to meet the middle fold-line.



22 Valley fold the left-hand side in so that it lies along the top edge.



23 Valley fold the paper in half from right to left. Press it flat and unfold it.



24 Valley fold the top edge down to meet the lower horizontal fold-line. Press it flat and unfold it.



25 Put in the valley and mountain folds as shown, thereby making the left-hand corner stand upright.

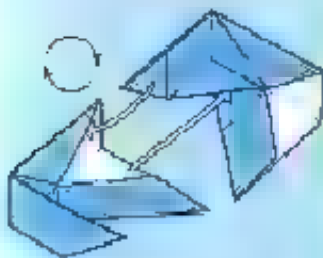


26 Valley fold the upright corner down towards you along the upper horizontal fold-line, thereby



27 making the two sides stand upright and completing one unit of the base. Now make three more units in the same way.

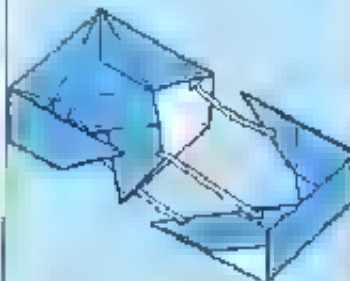
Joining the Units Together



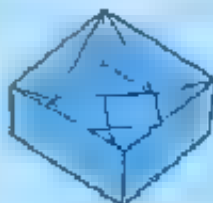
28 Insert one unit deep into the side pocket of another



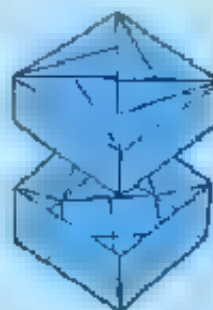
29 Lock both units together by tucking a point of the top unit underneath the point of the bottom unit.



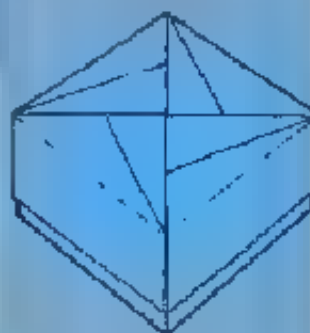
30 Repeat steps 28 and 29 with the remaining units.



31 Here is the completed base



32 Slide the lot over the base the way



33 completing the decorative box

ACTION LIZARD

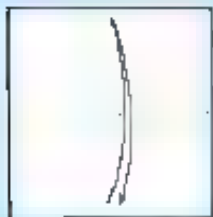
TOMOKO FUSE

As the various parts of the action lizard are made up of similar units, be very careful not to get the folding steps mixed up.

© 1994 by Tomoko Fuse



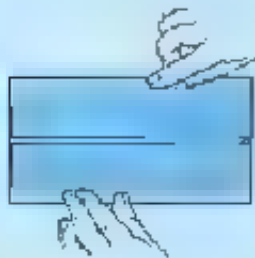
Basic Unit



1 valley fold down square in half (top bottom to top). Press it flat and unfold it.



2 valley fold the top and bottom edges to meet the middle fold-line, thereby



3 making a shape that in origami is called the cupboard fold.



4 Turn the cupboard fold over. valley fold the top and bottom right-hand corners over so they meet the middle fold-line. Press them flat and unfold them.



5 valley fold the right-hand side over towards the left as shown. thereby making a hat.



6 Open out the flap's two middle corners and



7 squash them down as shown thereby



8 completing the basic unit. Now make eight more units in the same way

Claws



9 You will need four basic units. A key fold one unit's triangular point over to the right as shown

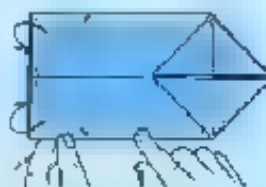


10 Valley fold the unit in half from top to bottom, thereby



11 completing one set of claws. Now make three more sets in the same way

Head



12 You will need one basic unit. Mountain fold the top and bottom left-hand corners behind to meet the middle fold-line, thereby



13 completing the head

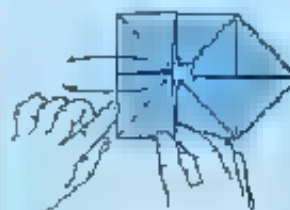
Body



14 You will need three basic units. valley fold one unit's top and bottom left-hand corners over to meet the middle fold-line. Press them flat and unfold them



15 valley fold the left-hand side over towards the right as shown, thereby making a flap



16 Repeat steps 6 and 7 with the flap, thereby



17 completing one body module. Now make two more modules in the same way

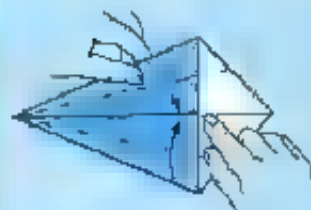
Tail



18 Turn one square around to look like a diamond. Valley fold it in half from bottom to top. Press it flat and unfold.



19 From the left-hand corner valley fold the top and bottom sloping edges over to meet the middle fold-line thereby making a shape that in origami is called the tail base.



20 Once again from the left-hand corner valley fold the top and bottom sloping edges over to meet the middle fold-line thereby



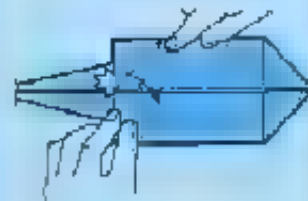
21 completing the tail



22 Flip the remaining base over and tuck the tail deep inside it



23 into the position shown by the dotted lines.



24 Place the top upper left-hand layer of paper directly



25 meeting a triangular point. With a mountain fold, tuck the point's tip inside the as far as you can



26 Repeat steps 24 and 25 with the top lower left-hand layer of paper, thereby

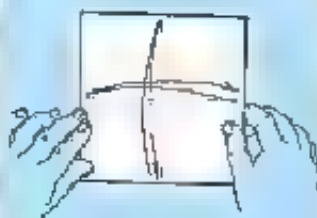


27 locking the tail in place



28 Finally, turn the tail over and around into the position shown

Front and Back Legs



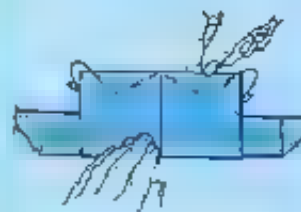
29 Front legs: valley fold the top and bottom edges and top and bottom edges of the square together in turn to make the vertical and horizontal foldlines, then open up again



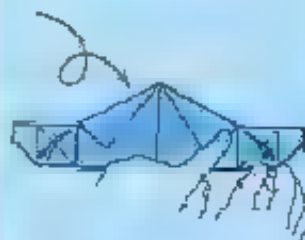
30 Place two sets of claws on top of the square, positioning them as shown, so that they lie above but adjacent to the horizontal foldline. Valley fold the square's top corners over as shown.



31 Valley fold the paper in half from bottom to top



32 Mountain fold the top corners behind as shown, thereby locking the claws in place



33 Turn the paper over. Valley fold each claw over to lie along its adjacent vertical edge. Press them flat and unfold them slightly.



34 Turn the model over, thereby repositioning the front legs. To make the back legs, repeat steps 29 to 34 with the remaining square and claws.

How to Join the Lizard Together



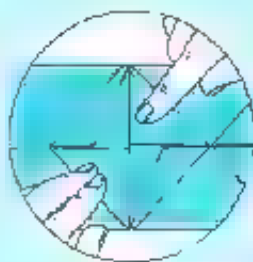
35 Join the head and the body module together as shown.



36 Carefully fold the upper and lower triangular points over, so that their sloping edges lie along the adjacent fold-line, thereby making two flaps.



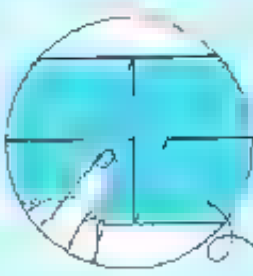
37 Insert the lip of each flap into the model as shown.



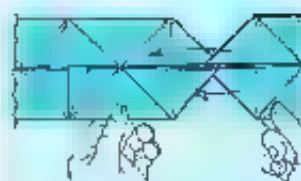
38 This should be the result.



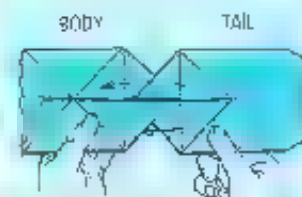
39 Turn the model over. Repeat steps 36 and 37.



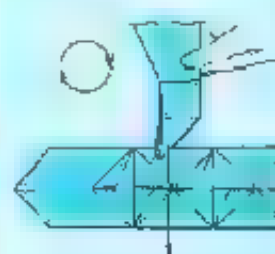
40 This should give the result: a movable joint. Turn the model over.



41 Repeat steps 35 to 40 with the remaining two body modules.



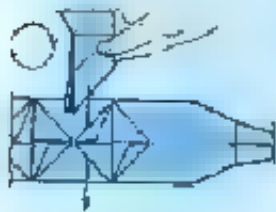
42 Join the tail and the body modules together as shown. Now repeat steps 36 to 40.



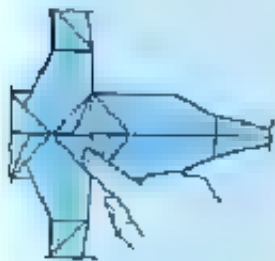
43 Turn the front legs around, into the position shown. Tuck them underneath the triangular points of the body module that is joined to the head.



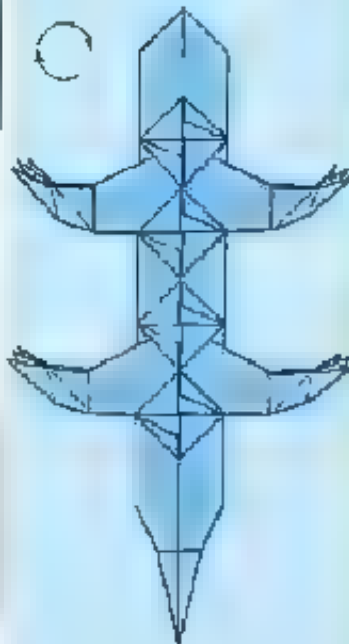
44 Make sure that the rear legs are positioned correctly on top of the body module.



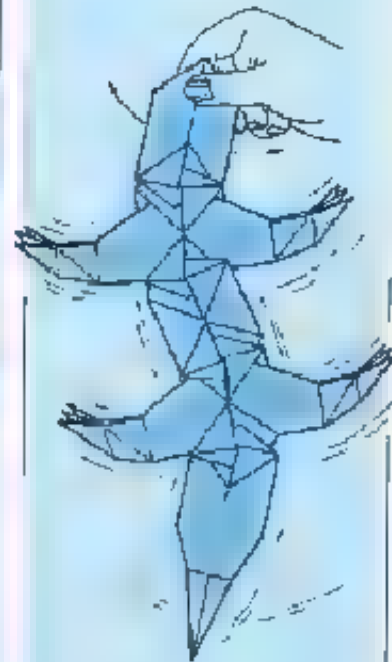
45 Turn the back legs around into the tail module. Tuck them underneath a joint point on the body module if it is joined to the tail.



46 Repeat step 44 with the back legs.



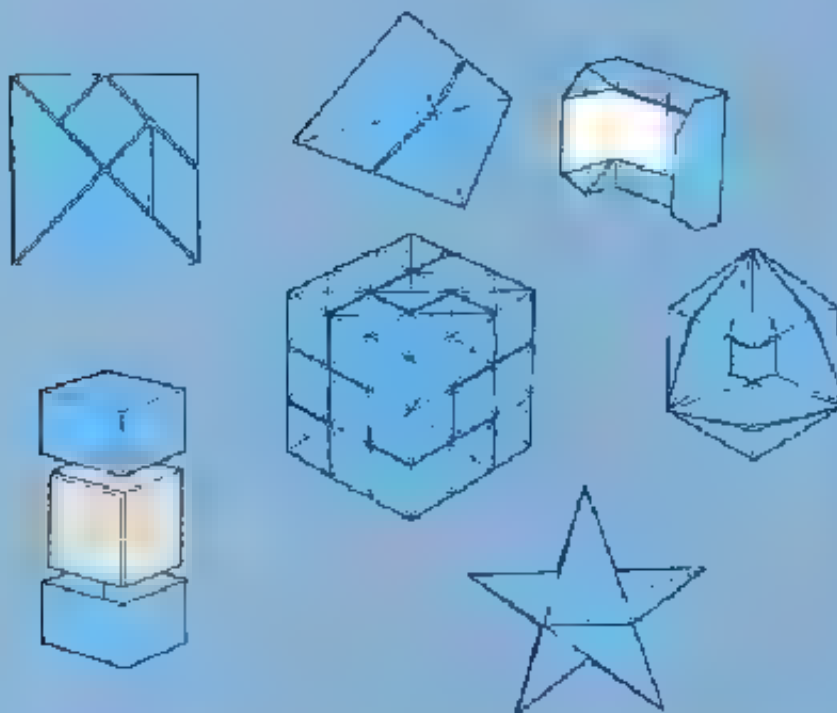
47 Turn the board around into the position shown, a complete



48 Hold the board by its head or tail. If you swing the board to the right and left it will move and walk about.

PUZZLE ORIGAMI

A s origami could be seen as a form of puzzle-solving, it is not surprising that many origami enthusiasts also enjoy making puzzles. Especially for *The Art of Origami*, we have created a paper version of the traditional tangram (see page 44). This is a puzzle square that has been divided into seven pieces. These pieces can be recombined to produce a large variety of other shapes. One paperoider has even had complete book knowledge of origami with a lot of paper to create an almost impossible puzzle, which is even more amazing when you know the solution (see page 56).



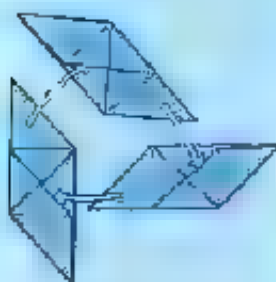
- SOMA CUBE -

OR GAMMIVERSION)
INTRODUCED BY
STEVE BIDDLE

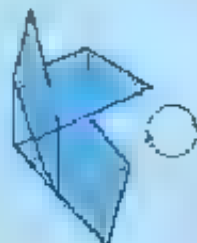
The soma cube was developed in 1936 by the Danish poet and puzzle creator Piet Mondrian. Many thousands of shapes and forms can be made from its seven pieces; in fact it can be likened to a three-dimensional version of the tangram (see page 44). This original version of the soma cube is based on the traditional origami cube on page 19. Once you have folded its seven pieces, see if you can fit them together in one large cube before you read the solution.

THIS PAPER CUBE IS MADE BY
FOLDING THE PAPER ALONG THE
DOTTED LINES. THE PAPER SHOULD
BE CUT ALONG THE DOTTED LINES.

Module A



1 Begin by following steps 7 to 8 of the cube on page 19, using every square of paper to make 122 units. To make module A, tuck three units together as shown.



2 Turn the units around into the position shown, thereby completing module A.

Modules B and C

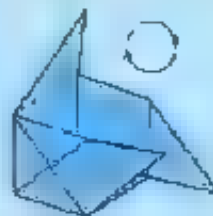


3 To make module B, begin by repeating steps 9 and 10 of the cube on page 20, with three units. Turn them around into the position shown to complete. To make module C, repeat this step with another three units. Tuck another unit into place as shown, thereby



4 completing module C.

Module D



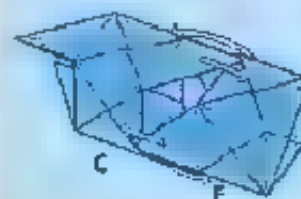
5 To make module D, begin by repeating steps 9 to 12 of the cube on page 20, using four units. Turn them around into the position shown to complete.

Module E

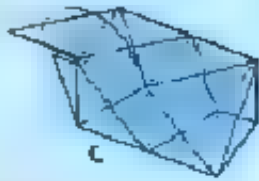


6 To make module E, begin by repeating steps 9 to 13 of the cube on page 20, using five units. Turn them around into the position shown to complete.

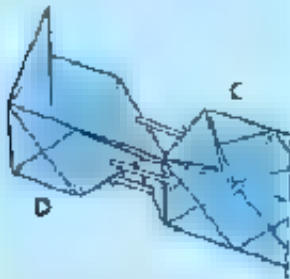
Joining the Modules Together



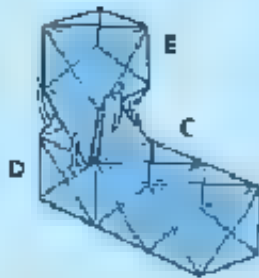
7 To make piece C, you will need one module A, one module D, and two of module E. Tuck module C and one module E together as shown.



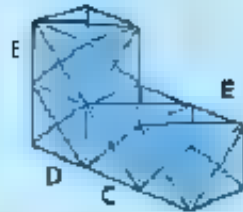
8 Valley fold the module C's top triangular point over toward the right.



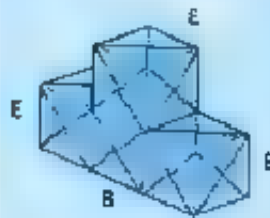
9 Tuck module C into place.



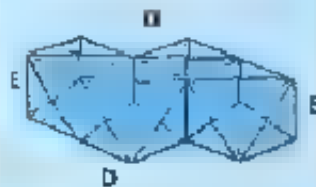
10 Stand module C, swap triangular point's height and tuck the second module E into place as shown, *carefully*.



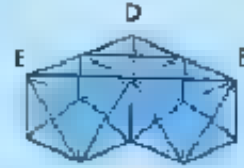
11 completing piece 1. The following six pieces are all constructed along "main lines."



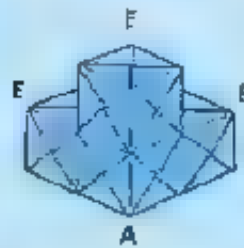
12 Piece 2: Tuck together one module C and three of module E as shown.



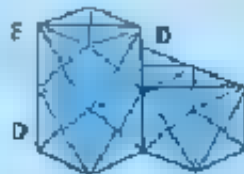
13 Piece 3: Tuck together two of module C and two of module E as shown.



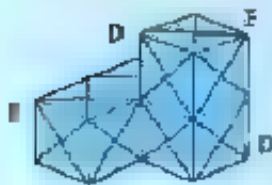
14 Piece 4: Tuck together one module D and two of module E as shown.



15 Piece 5: Tuck together one module A and three of module E as shown.

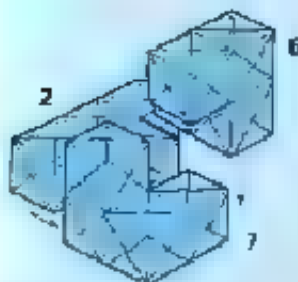


16 Piece 6: Tuck together two of module D and two of module E as shown.

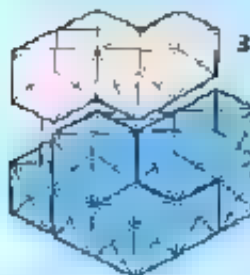


17 Piece 7: Tuck together two of module D and two of module E, as shown.

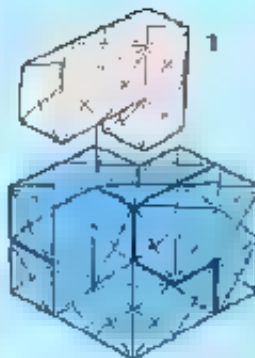
The Solution



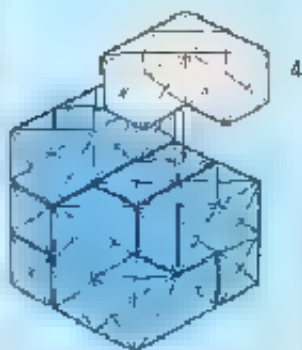
18 Place pieces 2, 6 and 7 together as shown.



19 Place piece 3 into position.



20 Carefully place piece 1 into position.



21 Carefully place piece 4 into position.



22 Finally, place piece 5 into position, hereby .



23 completing the 3x3x3 cube

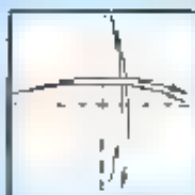
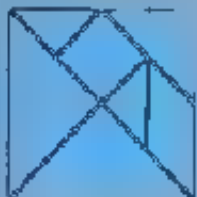
When you have succeeded in making the cube, my dearest little champion of your own with the same seven pieces.

TANGRAM

ORIGAMI VERSION
STEVE BODIE

A tangram is a traditional puzzle that originated in China before the year 2000 BC. You can play with the puzzle, either by yourself or with friends, the aim being to rearrange its seven pieces in the shape of a square.

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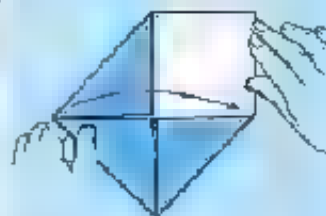
1 First make two large triangles: valley fold the opposite sides and top and bottom edges of side square together in both to mark the vertical and horizontal fold-lines, then open up again.



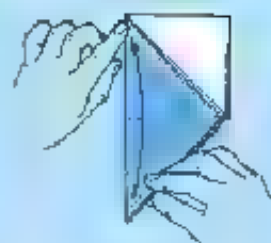
2 Valley fold five corners into the middle, thereby making a shape that in origami is called the blintz base.



3 unfold the top-right-hand corner



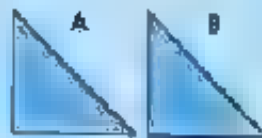
4 valley fold the paper in half from left to right



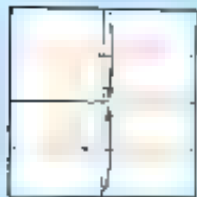
5 Valley fold the paper in half from bottom to top.



6 tuck the top-right-hand corner into the adjacent pocket, thereby,



7 completing one large triangle. Repeat steps 1 to 6 with another square, label the two triangles A and B.



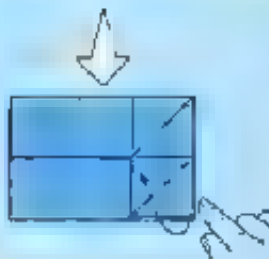
8 The next step is to make a parallelogram. Begin by repeating step 5 with one square. Valley fold the top and bottom edges to meet the middle fold-line.



9 Valley fold the top right-hand corner over to meet the middle fold-line.



10 Valley fold the right-hand side into the middle.



11 Inside reverse fold the bottom right-hand corner.



12 Valley fold the right-hand side over along the adjacent vertical fold-line.



13 Inside reverse fold the top right-hand corner.



14 Valley fold the top left-hand corner over to meet the adjacent folded edge.



15 Insert the left-hand side underneath the right-hand layers of paper.



16 Insert the lower left-hand corner into the adjacent sloping pocket, thereby completing the parallelogram. Label the parallelogram C.



- 17** Now, make a square. Begin by repeating step 1 with one square. Valley fold the top corners into the middle, thereby making a shape that looks like this:



- 18** Valley fold the bottom edge to meet the top's bottom edge.



- 19** Valley fold the right-hand side over to the left-hand side.



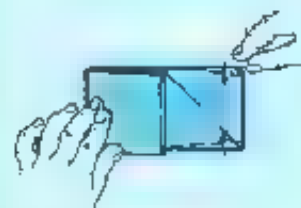
- 20** Valley fold the bottom edge up along the adjacent horizontal fold-line.



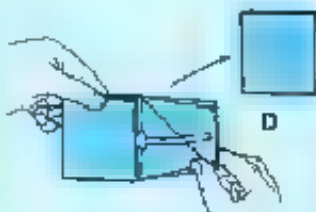
- 21** Insert the top point underneath the top layers of paper.



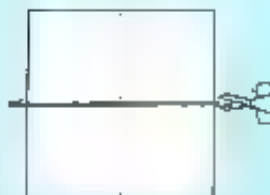
- 22** Along the existing vertical fold-line, mountain fold behind the left-hand section of paper.



- 23** Valley fold the top and bottom right-hand edges over on a slant.



- 24** Valley fold the paper in half from right to left, inserting the right-hand side into the adjacent pocket to complete the square. Label the square D.



- 25** Finally, make one medium-sized triangle and two small triangles. Begin by repeating step 1 with the remaining square. Cut along the horizontal fold-line, thereby making two rectangles.



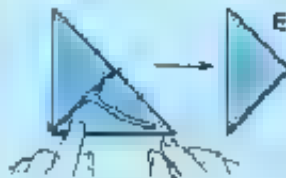
- 26** Place one remaining side-by-side valley fold the right-hand side down so that it lies along the bottom edge valley and the left-hand side so that it lies along the top edge



- 27** valley fold the top left-hand point down to meet the bottom edge



- 28** valley fold the left-hand section of the paper along the adjacent vertical fold-line.



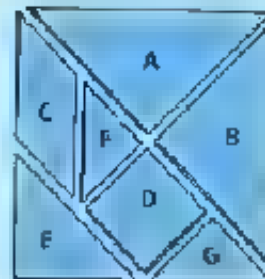
- 29** insert the bottom right-hand point into the adjacent sloping pocket thereby completing the triangle. Label this medium-sized triangle E



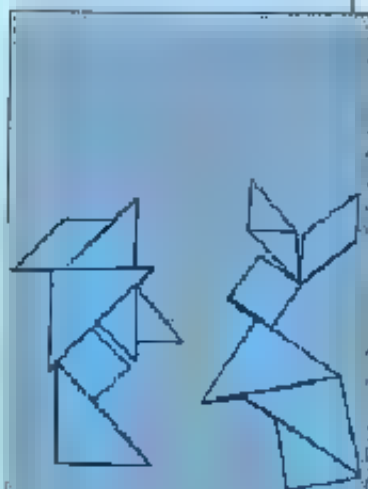
- 30** Cut the remaining rectangle in half along the vertical fold-line, thereby making two squares.



- 31** Repeat steps 1 to 3 with each square, thereby completing the small triangles. Label the two small triangles F and G



- 32** Make the tangram square. Shuffle the seven pieces and try to rearrange them to a square without looking at this illustration



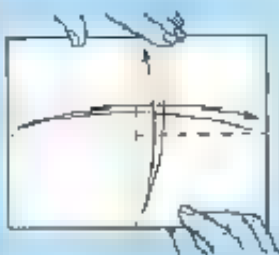
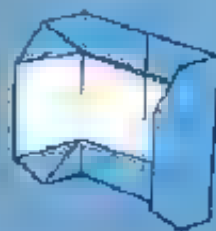
- 33** Here are just one of the many different shapes you can make from the tangram square. Why not invent a few of your own?

TUMBLER

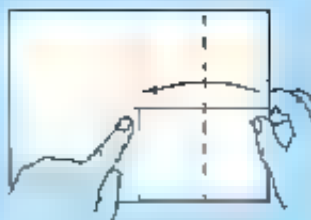
STEVE B. WOLF

This delightful and simple piece of action origami is based upon a model originally created by the late Seiryō Takekawa.

1. *Utricularia* 1. *Utricularia* 1. *Utricularia*



- 1** Place the rectangle sideways on the paper. Fold the opposite sides and top and bottom edges together to turn it inside out, and hold it in place with your fingers. Then open it up again.



- 2** Verify that the algorithm will run in $O(n^2)$ time.



- 3** Turn the paper around into the position shown. Valley fold the bottom corners in to meet the middle fold-line, thereby making a shape that looks like an upside-down roof.



4. We level the bottom pan up to meet the roof's bottom edge.



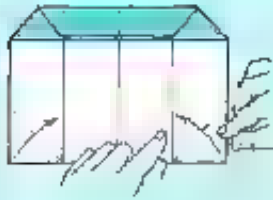
- 5** valley told the new bottom edge
up to meet the roof's bottom edge



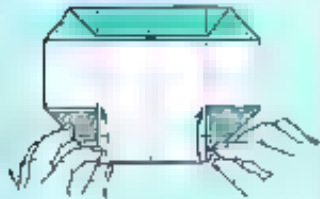
- 6** $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$



- 7** Turn the paper around, into the position shown. Valley fold the sides over to meet the middle fold-line. Press them all down, joining them.



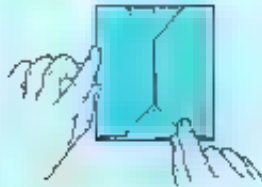
8 valley fold the bottom corners in to meet their adjacent fold-lines as shown thereby making two triangles



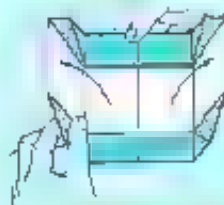
9 valley fold the bottom edge up to lie along the top edges of the two triangles



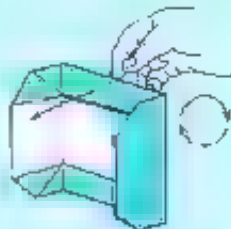
10 Once again, valley fold the sides over to meet the middle crease, thereby



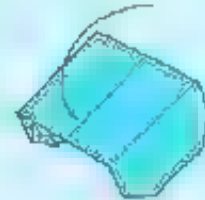
11 making two doors. unfold the doors, so



12 that they stand upright, thereby completing the tumbler



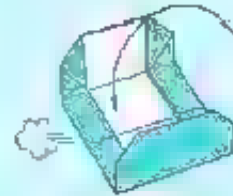
13 Stand the tumbler on a flat surface with its doors open away from you. Gently push its top edge with a finger as shown and its puzzling piece or dream will



14 pop it back out



15 turning a top result with a



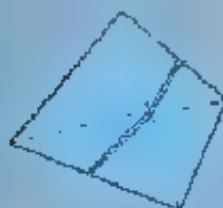
16 rat-rat-tat

THE PYRAMID

DIER BOULASIN

This model is constructed from two identical pieces, which are put together to form a pyramid. This is not difficult, nor is it quite as easy as it sounds:

Materials: 2 sheets of paper, 12 cm x 18 cm



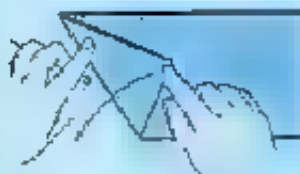
1 Place one rectangle's diagonal in the middle of the other, then fold, then open again.



2 Valley fold the right-hand side over to a point one-third of the way from the left edge, then the left-hand side over to the right-hand side.



3 Turn the paper around, into the position shown. Valley fold the left-hand rectangle in half along one diagonal as shown.



4 This should be the result. Press the paper flat and unfold it.



5 Valley fold the left-hand rectangle in half along its other diagonal. Press it flat and unfold it.



6 Valley fold the right-hand rectangle in half from bottom to top, being careful only to press on the paper from the rectangle's middle point to the side. Unfold.



7 Repeat steps 3 to 6 with the right-hand rectangle.



8 Turn the paper over. Valley fold the middle rectangle in half along a diagonal, one from top right to bottom left.



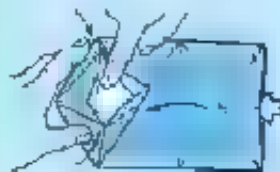
9 This should be the result. Press the paper flat and unfold it.



10 Stand the left and right flaps upright along the adjacent vertical fold. Along the existing fold lines, open up the rectangle, taking



11 one layer of paper to one side and two to the other, as shown. Along the existing fold lines, push the two layers side inward.



12 Bring the top and bottom points together, thereby making the paper become three-dimensional. At the same time, producing a triangular flap. Repeat steps 10 to 12 with the right-hand rectangle.



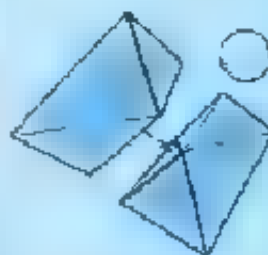
13 Position the triangular flaps so that the left-hand one points downwards, and the right-hand one points upwards. Hold the middle rectangle, existing diagonal fold line.



14 at the same time inserting the original flap deep under the opposite sloping sides as shown.



15 Rip up the folds, thereby, completing 2/3 parts of the pyramid. Use the remaining rectangle of paper to make one more piece in the same way.



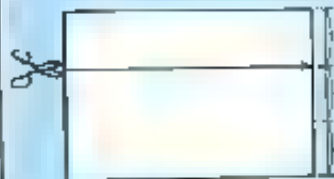
16 Turn the pieces around and place them together, as shown to complete the pyramid.

ROTATING TETRAHEDRON

STEVE BODLE

This puzzle can be twisted so that various surfaces are revealed, thereby causing the pattern to change continuously.

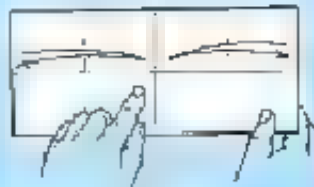
USE A SQUARE PAPER 10 CM (4 IN) ON A SIDE. FOLD IT IN HALF BOTH HORIZONTALLY AND VERTICALLY. MARK THE FOLD LINES.



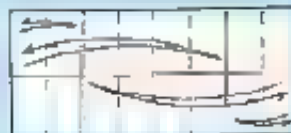
- 1 Pass the rectangle sideways on, cut off a third as shown, and discard it.



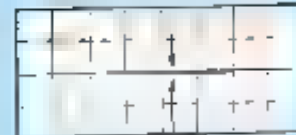
- 2 Valley fold the opposite sides and top and bottom edges together in turn to mark the vertical and horizontal fold-lines, then open up again.



- 3 Valley fold the sides over to meet the middle fold-line. Press them flat and unfold them.



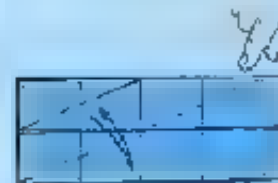
- 4 Divide the remaining two equal sections by valley folding.



- 5 Valley fold the top and bottom edges to meet the middle fold-line.



- 6 Working from the left-hand side and along the top edge, make a diagonal fold-line between the top of the second vertical fold-line and the left-hand end of the horizontal fold-line, as shown. Press the paper flat and unfold.



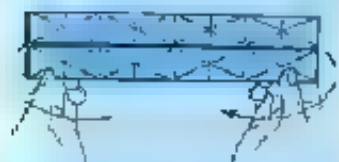
- 7 Repeat step 6, making the diagonal fold-line between the top of the middle vertical fold-line and the left-hand end of the horizontal fold-line, as shown.



8 Continue repeating step 6 with the top edge, to the end of the paper, making five diagonal fold-lines, as shown in step 7.



9 Working from the left-hand side but this time along the bottom edge, repeat steps 6 to 8, ending with 10 diagonal fold-lines, as shown in step 10.



10 Bring the paper's right- and left-hand sides together by valley folding it as shown.



11 Insert one side inside the other, thereby making the model triangular and three-dimensional.



12 Push in the three triangular sides at the top of each side.



13 Press all three top points down and through the centre. The new row of triangles will assume a similar shape.



14 Once again, press all three top points down and through the centre.



15 Turn the model over. Repeat steps 2 thereby.



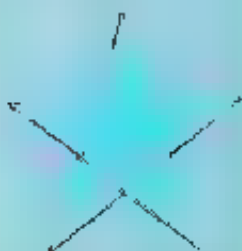
16 completing the rotating tetrahedron. To make the model rotate, hold it on either side and twist the outer edges in towards the centre, so that the inner surfaces appear.

PENTAGRAM STAR

S H E Z F M C T O

This is a very easy way to make a five-pointed star with just a few folds. As always, fold carefully.

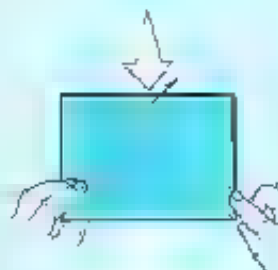
1 2 3 4 5 6 7



1 Turn the rectangle sideways on. Valley fold it in half from right to left.



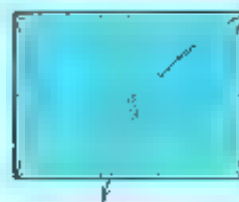
2 Valley fold the paper in half from bottom to top.



3 Valley fold the paper along a line from top-left to bottom-right.



4 Mountain fold the top sloping edge and valley fold the right-hand side as shown. Press them flat and unfold them.



5 Unfold the paper completely. Valley fold the like paper along a line from top-left to bottom-right.



6 Turn the paper around into the position shown. Valley fold the top right-hand point over on a line between the middle of the top edge and the bottom right-hand point.



7 Valley fold the left-hand point over a line between the right-hand sloping side at the top.



8 Across the existing fold, the inside of the paper is shown, making so that the point swings across to the left.



9 Along the missing side line, the mountain fold the paper as shown.



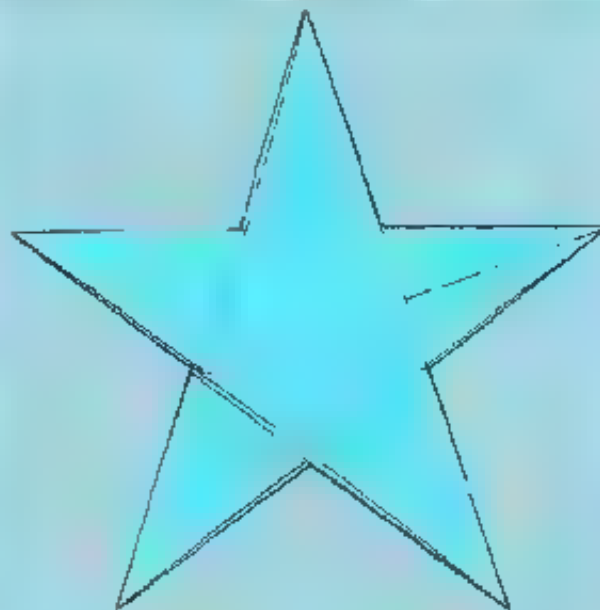
10 This should be the result.



11 Turn the model over, valley fold the top flap, and pull over on a line between the two left-hand flaps. Now the bottom, right-hand flap.



12 Repeat steps 10-9, thereby



13 A pretty gift for all the

INSIDE-OUTSIDE BOX

TIME 10 MIN

A red box is displayed. Its lid is removed and a blue box is seen to be fitting snugly inside. The blue box is removed. The lid is replaced on the red box.

Now are you ready for this?

The lid from the blue box is removed, the red box is placed snugly inside the blue box and the lid is replaced on-top of the blue box. A really quite impossible puzzle.

1. Cut out the rectangle shown. 2. Fold the white paper in half from bottom to top. 3. Fold the paper in half from left to right.



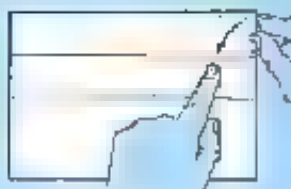
Base



- 1 Place white rectangle sideways on valley fold it in half from bottom to top. Press the paper flat and unfold it.



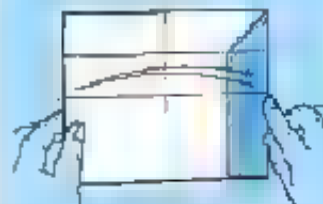
- 2 Valley fold the top edge down to meet the middle fold-line. Press it flat and unfold it.



- 3 Valley fold the top right-hand corner over to meet the adjacent fold-line.



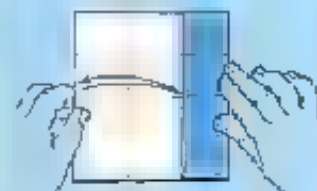
- 4 Valley fold the right-hand side panel as shown.



- 5 Valley fold the paper in half from right to left. Press it flat and unfold it.



- 6 Valley fold the right-hand side panel to a point that is 0.5 cm (1/4 inch) to the right of the fold-line made in step 5.



- 7 Valley fold the left-hand side over to meet the vertical folded side, as shown. Press it flat. Unfold the paper completely.



8 Valley fold the bottom right-hand corner up to meet the top horizontal fold-line as shown.



9 Refold the right-hand side along the second vertical fold-line. Press it flat and unfold it.



10 Unfold the paper completely. Working from the left, valley fold the first vertical fold-line over to lie along the middle horizontal fold-line, only pressing down on the part of the fold shown by the line of dashes.



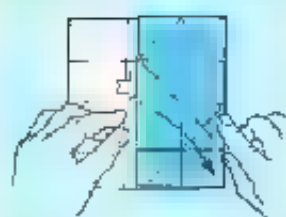
11 Once again, working from the left, refold the left-hand side along the second vertical fold-line. Press it flat. Unfold the paper completely.



12 Valley fold the bottom edge up. Along the adjacent horizontal fold-line, thereby creating the missing middle piece of the fold. Press it flat and unfold it.



13 Refold the right-hand side along the second vertical fold-line.



14 On the top right-hand layer of paper, make the valley and mountain folds as shown, thereby opening it out and making the underneath layer of paper rise up along the middle horizontal fold-line to form the back and right-hand side of the base.



15 Form the valley and mountain folds on the bottom flap of paper as shown, thereby creating a small triangle that will come to rest against the base's side.



16 Open the bottom flap of paper and push the top layer against the base's back and right-hand side, thereby covering up the small triangle.



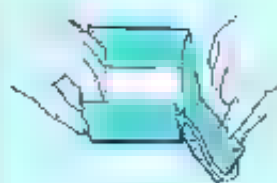
17 On the left-hand side of the paper, carefully make the valley and maintain it as shown, thereby forming the left-hand side of the base. Repeat step 5.



18 thereby creating a small triangular flap in front. Insert the flap into the model as shown.



19 valley fold the top edge down along the adjacent horizontal fold-line.



20 Insert the right-hand flap of paper into the adjacent pocket, thereby

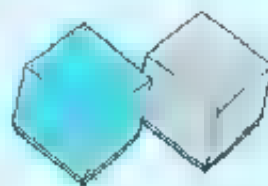


21 completing the base.

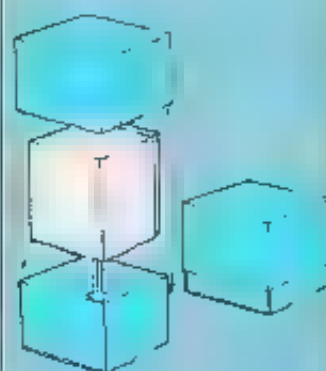
Lid



22 Repeat steps 1 to 2 with a identical smaller rectangle of paper, but being careful in step 3 to fold the top right-hand corner over to a point that is 0.5 cm (1/4 inch) above the adjacent fold-line. The remaining folding procedure is exactly the same as for the base.



23 Slide the lid over the base, thereby completing one box. Make another box with the remaining two rectangles of paper.

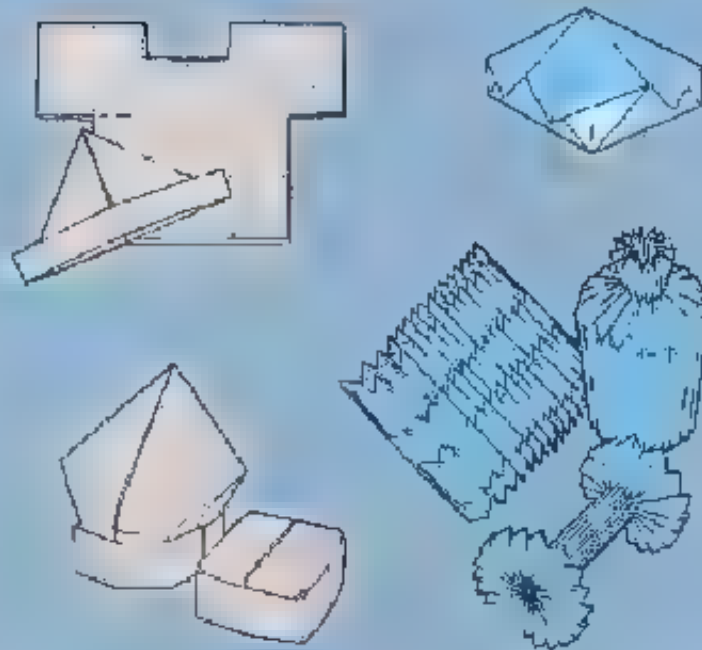


24 Repeat steps 1 to 2 with a third identical smaller rectangle of paper, but being careful in step 3 to fold the top right-hand corner over to a point that is 0.5 cm (1/4 inch) above the adjacent fold-line. The remaining folding procedure is exactly the same as for the base.

STORYTELLING ORIGAMI

Opportunities to combine origami with storytelling present themselves whenever people are gathered together. The showing of origami is a new and exciting experience. Onlookers of all ages are filled with rapture and wonder as models take shape and transform from one to another in the storyteller's hands.

When developing an origami story, it is a good idea to write the model's folding sequence down in the form of a list, then to develop your script and make it flow as smoothly as possible. Use representations

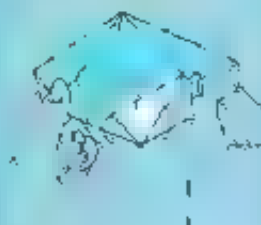


PAPER PUPPET

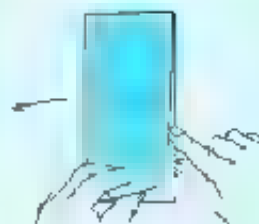
RACHEL

Even with the best illustrations, some people will have trouble with particular steps. To solve this problem, the creator of this delightful action model has written a story that gives a descriptive name to each move or shape. Here is Rachel's story, written as she would tell it.

THE PAPER PUPPET



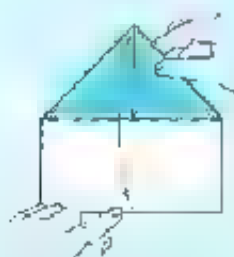
1 One day as I was playing my book away, Volley told the square in half from left to right. Press it flat.



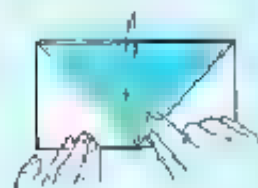
2 And then...



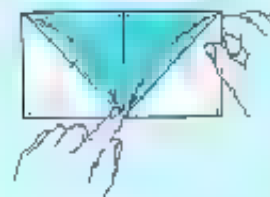
3 Well, at my table, I started to play. Volley told the top corners down to meet the middle fold-line.



4 That's when I found it's Volley told the paper in half from top to bottom.



5 envelope and then I do the same more... said, "You can do better."



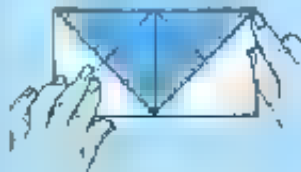
6 I folded the top down and rolling up the top corner down to meet the middle fold-line.



7 made a good creative Press the paper flat.



8 'Open up! It's the
bunfoid the model back to



9 'on again, police
the envelope and letter



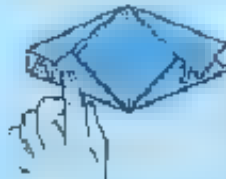
10 'Now fold it just half way
'Valley fold the top corners down to
meet the



11 'No more should you dare,
saying fold it is.



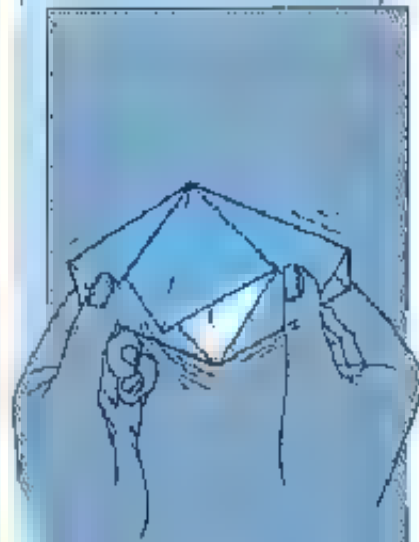
12 And fold the bottom
'Valley fold the bottom corners up to
meet the sloping folded edges, while
at the same time



13 'Can you see up to where?'
Inserting them underneath the top
corners as shown



14 'Then hold it and push it, and
here's what you say
(Hold the side points, bring them
towards each other and make the
middle section of paper rise up along
the existing fold-lines)



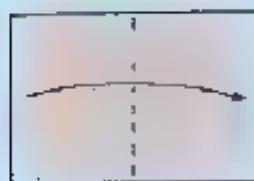
15 'I can't do it again! Howdy!
Howdy!
(Let the side points point up
to make the puppet talk)

THE CAPTAIN'S HAT STORY

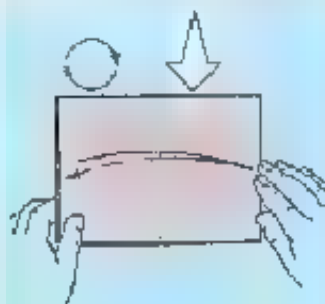
TRADITION

To accompany the folding of this traditional paper hat, the late E. I. Ilian Oppenheimer told the story of how a child's hat became first a boat and then the captain's shirt. Read on to find out what happens!

© 1994 by E. I. Ilian Oppenheimer
All rights reserved.



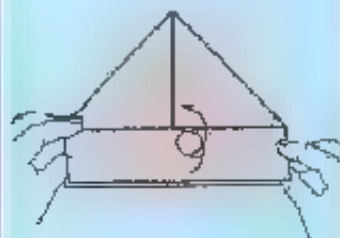
1 Valley fold the sheet of newspaper in half along its middle fold.



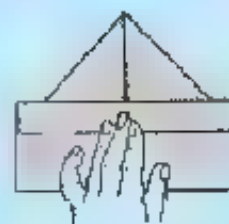
2 Turn the newspaper around, so that the folded edge is along the top. Valley fold the newspaper in half from side to side. Press it flat and unfold it.



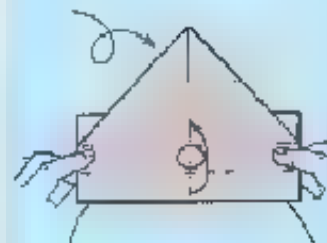
3 Valley fold the top corners down to meet the middle crease line.



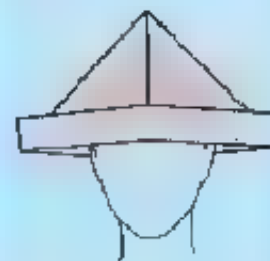
4 Valley fold the front flap at the bottom up so meet the horizontal edge and then over along the edge.



5 This should be the result.



6 Turn the paper over. Repeat step 5.



7 Press the paper flat. Open out the paper a little, thereby making the captain's hat.



8 Fold the side and front edges of the hat in either hand and pull them apart, thereby



9 adjusting the hat



10 into the new shape. Position the mode as shown and valley fold the bottom front of the front flap up



11 Repeat step 7 thereby



12 making the fireman's hat



13 Press the paper flat again and turn it over valley fold the bottom part of the front flap up, so that it matches the one behind



14 Repeat steps 8 and 9 thereby



15 making the firefighter's hat



16 Press the paper flat again valley fold the front flap so the bottom is up on a line between the two side panels, as shown



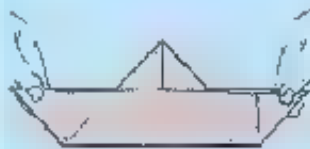
17 Mountain fold the base flap at the bottom behind on a line between the two side points.



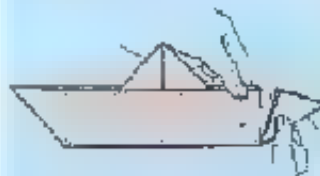
18 Repeat step 2 on every existing the paper is tall.



19 Press the paper flat again. Pinch the two side points and pull them apart, thereby



20 making the traditional newspaper box.



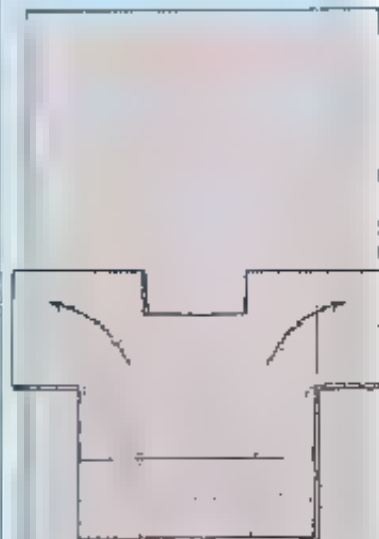
21 Now you begin to fold the hat. The hat is now almost in the shape the box loses its stem and base. Now fold the side points up as shown.



22 it also loses the bridge. You hear the top point off.



23 Now there is still a unfold what is left.



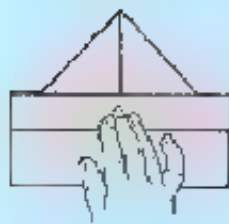
24 nothing left but the captain's shirt

PRINTED HAT

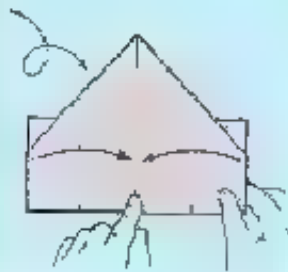
(TRADITIONAL)

In this folding routine, a hat folded from a sheet of newspaper is changed into various other types of hat.

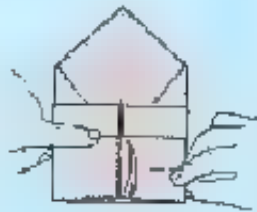
© 1994 by The National Association of Teachers of English



1 Begin by following steps 1 to 5 of the original Hat on page 2, using the sheet of newspaper.



2 Turn the paper over. Valley fold the top point down to meet the bottom edge.



3 Valley fold the flap up to meet the adjacent horizontal edge. Press it flat and unfold it.



4 Valley fold the bottom corners up to meet the fold-line made in step 3.



5 Valley fold the flap up along the adjacent horizontal edge.



6 As shown, fold the flap along the fold-line made in step 3, inserting it behind the underneath layers of paper.



7 Valley fold the top point down, inserting it underneath all the layers at the bottom.



7 Open out the paper a little thereby



8 making the party hat



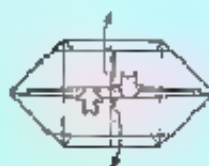
9 in top corner. Keep it until and back edges of the hat in either hand and pull them apart thereby



10 compress the paper



11 into this new shape. Valley fold the top and bottom points into the middle and insert them underneath the horizontal bands of paper



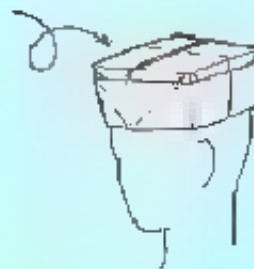
12 Put your fingers inside the paper gently pull your hands apart. This gives it



13 start to open out into a box



14 Fold the corners and sides of the box together to make it firm and strong



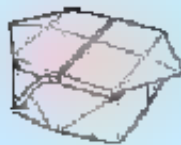
15 Turn the box over thereby making the printer's hat



17 Pull out the two side points from the band of paper. Arrange them so that they are flat, sticking out beyond the band. Thereby



18 making the paper's cap.



19 Pull out the two side points from the band of paper. Arrange it so that it is flat, sticking out beyond the band. Thereby



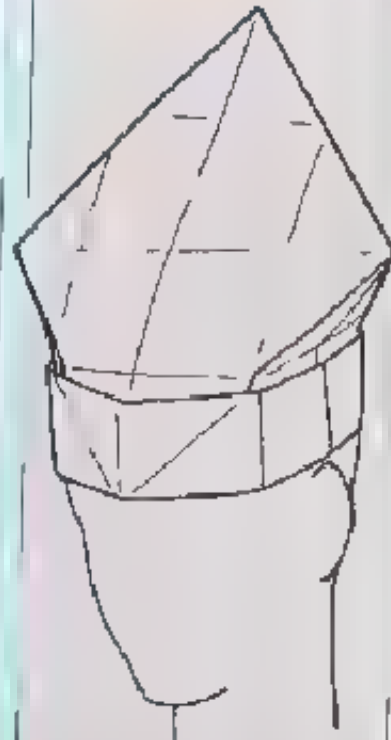
20 making the mortar-board.



21 Pull the mortar-board's front point straight up, thereby



22 make the mortar-board's mitre



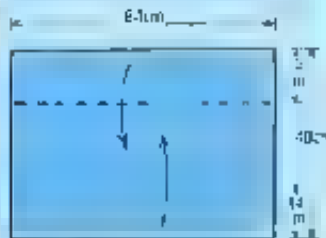
23 For an impressive effect, unfold the mortar-board to show that it is made of paper and not a heap of newspaper.

· TROUBLEWIT ·

(TRADITIONAL)
INTRODUCED BY
SILVER HIDDLE

One of the earliest types of entertainment to be recorded in China was the art of folding and pleating a rectangle of paper in different ways, so that, when manipulated by the performer, it could be assembled in an assortment of different shapes. About 300 years ago, a French priest, Père Matthieu, took this paper-folding art from China to France. In France, it had different names, *Papier Multi-forme* being the most popular. It was in England, during the last century, that this art became known as 'Troublewit'.

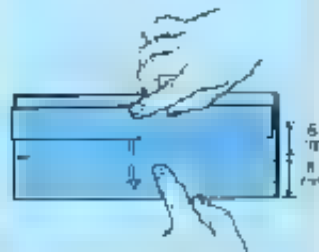
1. OPEN PAPER (width 10 cm, length 20 cm)
2. FOLD PAPER (width 10 cm, length 10 cm)
3. FOLD PAPER (width 10 cm, length 5 cm)



1 Place the rectangle sideways on valley fold the top and bottom edges over as shown, thereby making two panels of paper.



2 Valley fold the upper panel over along a horizontal line that is 3 cm (3 inches) down from the top edge.



3 Valley fold the lower panel over along a horizontal line that is 3 cm (3 inches) up from the bottom edge.



4 This should be the result: three panels either side with a strip in the middle.



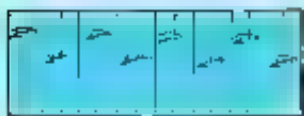
5 Turn the paper over valley fold the paper in half (turn side to side). Press it flat and unfold it.



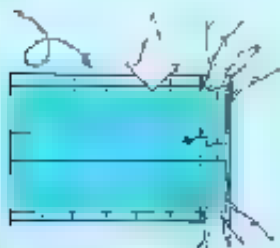
6 valley fold the sides over to meet the middle (side-line). Press them flat and unfold them.



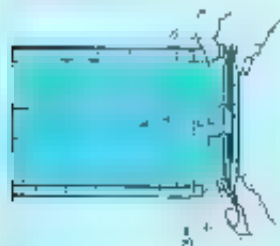
7 Divide the length into eight equal sections by valley folding. Press the folds flat and unfold them.



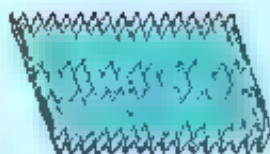
8 Divide the length into 16 equal sections by valley folding. Press the folds flat and unfold them.



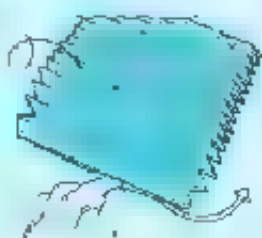
9 Turn the paper over. Press one side of the length into 32 equal sections by valley and mountain folding. Note that the mountain folds take place along existing fold-lines.



10 Take great care with the pleating, and make sure that your folding is neat and uniform. Pleats require no perfection, only care.



11 This should be the result: one long pleated strip of paper, rather like an accordion.



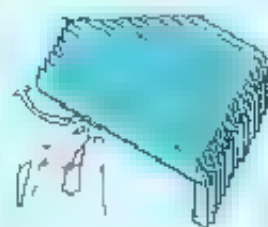
12 Turn the paper over. Now comes one of the trickiest bits of all - making the troublemaker's angled corners. Take the right-hand folded edge (the 1600mm side) and the pleated side, and carefully ease it out, until it stands at an angle of 90° to the main part.



13 Carefully reverse fold the angled corner into shape, and



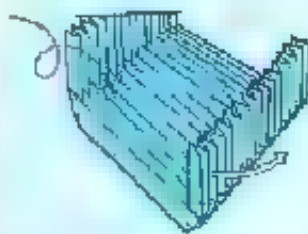
14 Press the folds firmly to gether as shown.



15 Now take the left-hand folded edge and carefully ease it out in the same way. As before, never fold the angled corner into shape.



16 This should be the result.



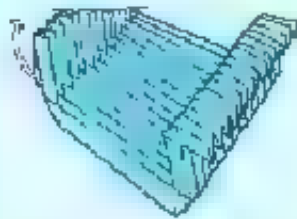
17 Turn the structure over. Now the two long-hand raw edge and carefully ease it out, until it stands at an angle of 90° to the top part.



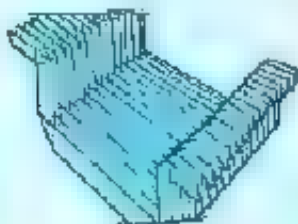
18 Repeat step 13 at the point where the petals are.



19 Repeat step 12.



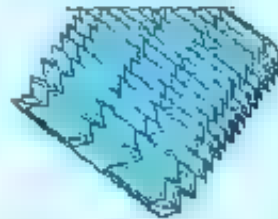
20 Now take the left-hand raw edge and carefully ease this out in the same way. As before, reverse the angled curve into a flat.



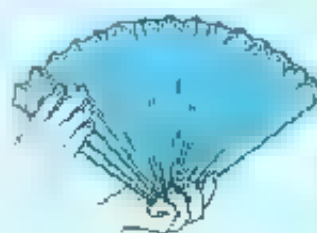
21 This should be the result: a completed front view.



22 To sharpen the folds, lay the prototype on its side and place a heavy book or two on top to compress it.



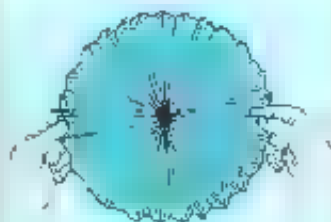
23 When step 22 has been done satisfactorily fold the prototype back into position as shown.



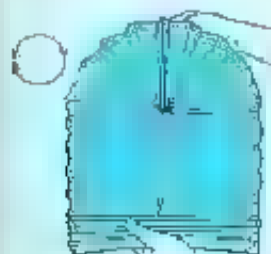
24 Here is the first, and simplest shape, the fan.



25 The ribbon is made by holding the prototype on the middle as shown.



26 With the double air closed as in step 23, the rosette is made by bringing the top and bottom of each side panel together.



27 Let one side of the rosette go and you will have what looks like a church window. From now on, you can devise many hundreds of shapes. Each basic fold on the paper will provide you with a new shape.



28 First Basic Fold: This shows the first basic fold with one panel closed out and pressed together along the right and back vertical panels round and together thereby



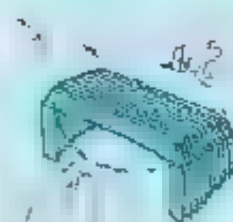
29 making the candle stick.



30 Second Basic Fold: This shows the second basic fold with two panels closed out and pressed together. Bring the front and back horizontal panels together in the direction shown by the arrows, thereby



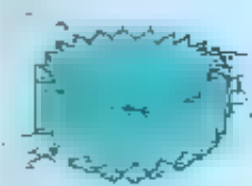
31 making the dumbbell



32 Turn the birthday cake over to



33 Turn the birthday cake over to



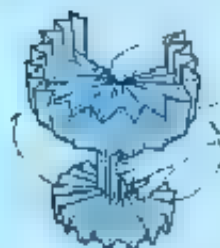
34 Turn the birthday cake over to



35 Third Basic Fold. This shows the triangle with three panels eased out and pressed together. Turn the triangle around into the position shown, then bring the front and back vertical panels together, thereby



36 making the bottle



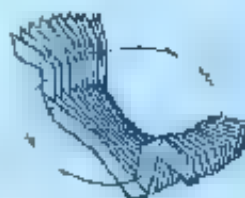
37 Go back to the Third Basic Fold and bring the vertical panels together in the opposite direction of where the glass



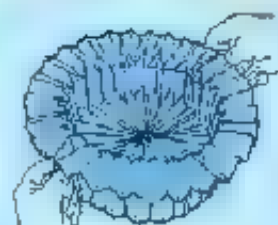
38 Fourth Basic Fold. This shows the triangle with four panels eased out and pressed together. Turn the triangle around into the position shown and take the front horizontal panel around to the back, thereby



39 making the honeycomb



40 With the triangle at this position, bring the vertical panels together and hold in place, thereby



41 making the sweet dish

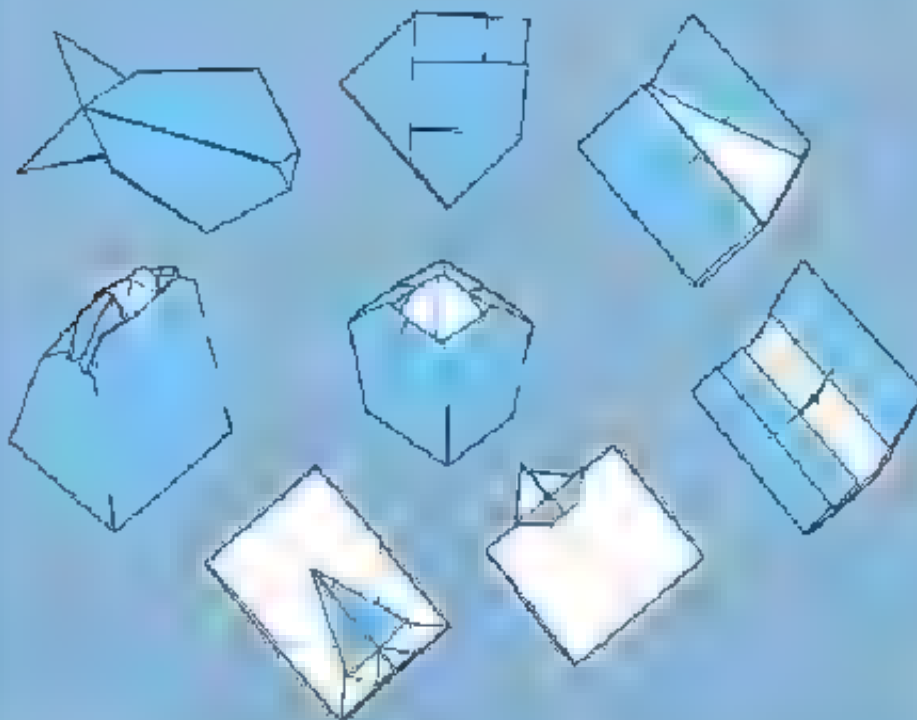


42 To complete, turn the sweet dish over to make the decorated top

PRACTICAL ORIGAMI

Many letter holders, envelopes and other useful items have been developed in origami perhaps because it is an interesting technical challenge to try to make pockets into which loose slips can be inserted. Many different origami wallets and containers have also been designed. Plastic business cards, sheets of paper, a gift of pencils.

In 1968, Iot ... joined a British paperfolder with an interest in practical origami. Iot ... founded the Envelope and Letterfold Association with the aim of circulating information amongst those with similar interests.

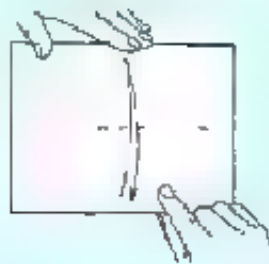
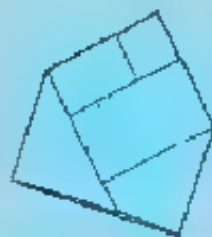


BAMBOO LETTERFOLD

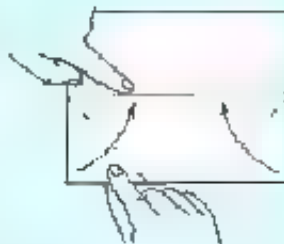
TRADITIONAL
INTRODUCED BY
TAKENAO HANDA

This traditional, elegant model is
an ideal way of folding up a
letter.

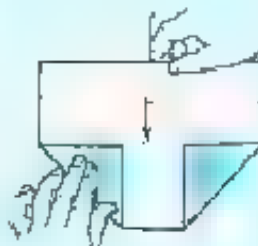
ORIGIN: JAPAN (16th century)



1 Place the sheet of paper in
valley fold in half from
bottom to top. Pleat fold and unfold it.



2 Valley fold the two bottom corners
up to meet the middle fold-line.



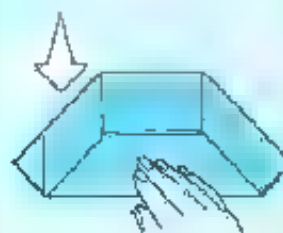
3 Valley fold the top edge down to
meet the middle fold-line.



4 Valley fold the top corners down to
meet the vertical edges as shown.



5 Valley fold the bottom edge up to
meet the horizontal edge.



6 This should be the result.



7 Turn the paper over, valley fold
the left-hand corner over on a vertical
line as shown.



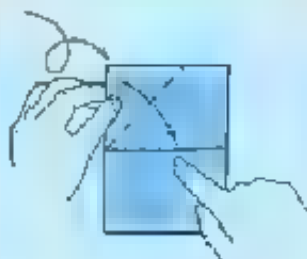
8 Valley fold the right-hand corner over the horizontal crease, and



9 Insert it underneath the opposite sloping edge



10 This should be the result



11 Turn the paper over valley fold the top left-hand corner down to meet the horizontal edge



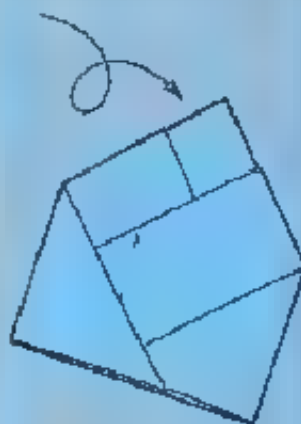
12 Valley fold the top right-hand corner down to meet the horizontal edge, and



13 Insert it underneath the opposite sloping edge.



14 This should be the result



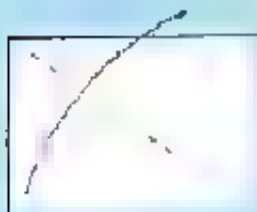
15 Turn the paper over valley fold the top left-hand corner down to meet the horizontal edge

FISH LETTERFOLD

MICHEL BRAND

Here is a very novel way of
folding up a letter

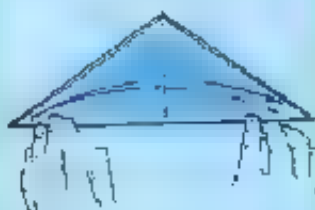
Step 1: Fold the paper in half
Step 2: Fold the paper in half



1 Place the rectangle sideways on
valley fold it along a line from top left to
bottom right



2 Mountain and valley fold the edges
down into the model along the line of
the adjacent sloping edges, as shown,
thereby making a triangle



3 Valley fold the triangle in half from
top to base. Press it flat and unfold it



4 Valley fold the right and left-hand
halves of the bottom edge up to meet
the middle crease



5 Valley fold up a side of the bottom
point. Press it flat and unfold it



6 Using the fold-line made in step 5
as a guide, insert the bottom point into
the central slot



7 This should be the result



8 Turn the model over. Valley fold the top left and right corners along the edge of the top flap.



9 Shape the top left corner into a valley fold.



10 Without turning the model over, repeat steps 8 and 9 with the top right-hand point.



11 Insert the fins down inside the model by going between the top and outer layers of paper.



12 Inside reverse fold the two side points at the angle as shown.



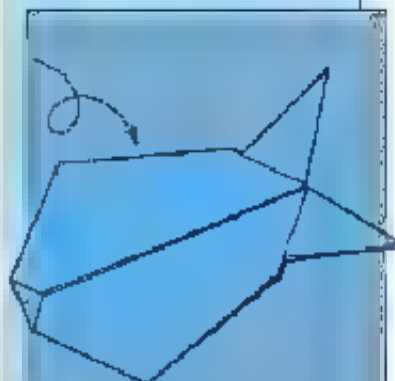
13 Separate the front layer of paper from the base of the model.



14 Insert one side flap into the other at a 90-degree angle while at the same time.



15 Folding the separated layers back together. Press down flat, thereby.



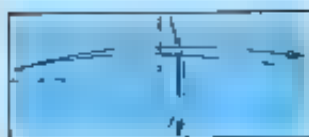
16 Completing the shikhar model.

FANCY WALLET

MEDIUM BUNDLE

This model was originally created to be folded from a long gift towel, but it is just as effectively made from paper. The wallet makes use of pleating and provides endless possibilities for variations.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.



1 Place the rectangle sideways on. Valley fold the opposite sides and top and bottom edges together in turn to make the vertical and horizontal fold-creases then open up again.



2 Valley fold the top and bottom edges over to meet the middle fold-line. Press them flat and unfold them.



3 Valley fold the bottom right-hand corner over to meet the middle fold-line, thereby making a small triangle.



4 Valley fold the top-left and top-right corners over a line between the top right hand corner and the middle fold-line.



5 Valley fold the top right-hand corner over to meet the middle fold-line.



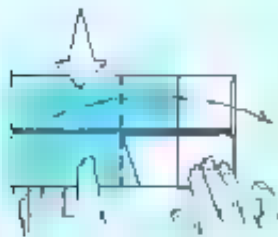
6 Valley fold the right-hand side over on the line at which the top-left (left) and



7 the top-left corners are folded.



8 Turn the paper over. Valley fold the top and bottom edges over to meet the middle fold-line.



9 Valley fold the left-hand side of the paper over to the right, along what was originally the middle fold-line.



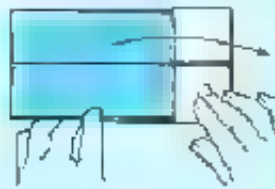
10 Using the underneath right-hand side as a guide to the position of the fold-line, valley fold the right-hand side of the paper over to the left.



11 Press the paper flat. Unfold the top layer.



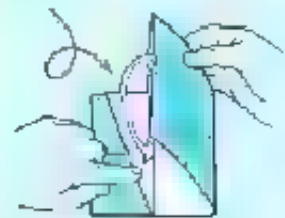
12 Along the existing fold-lines, place the paper as shown, at the same time inserting the paper underneath the up-right-hand layers in order.



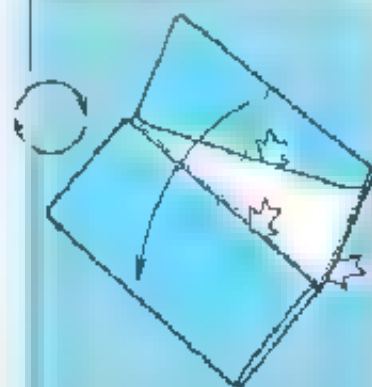
13 Using the vertical folded edges as a guide to the position of the fold-line, valley fold the top layer of paper over to the right.



14 Bring the underneath right-hand side as a guide to the position of the fold-line, mountain fold the top layer of paper behind.



15 Turn the model over. Insert the top layer of paper into the model as shown.



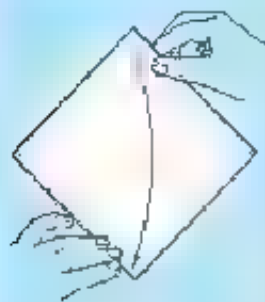
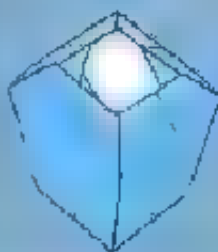
16 Valley fold the model in half from front to bottom, thereby completing the model. The arrows indicate the various pockets that the water contains.

FLOWER VASE

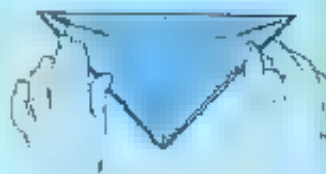
SABURO KASE

This charming model makes an ideal container for all sorts of small items, such as paper strips, pens and pencils. Try changing the angle of the fold-lines in step 7 each time you make this model to see how many different flower vases you can create.

by SABURO KASE, 1940-1941



1 Turn the square around to look like a diamond. Valley fold it in half from top to bottom, thereby making a triangle.



2 Valley fold the triangle as left from right to left.



3 Fill the square up along the middle fold-line. Open out the paper again.



4 Adjust it down to become a diamond.



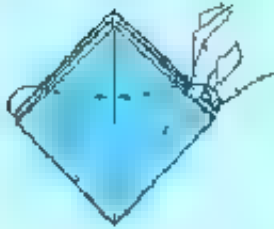
5 Turn the paper over, then repeat step 4.



6 and 5, thereby making a shape that in origami is called the preliminary fold.



7 Turn the shell over, adjust so that the open layers are pointing away from you. Valley fold the top right and left side points over to meet the middle fold-line as shown. Press them flat and unfold them.



8 Using the fold-lines made in step 7 as a guide, inside reverse fold the side points



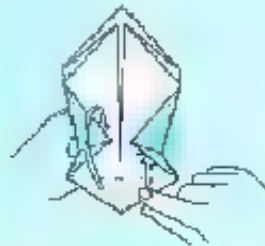
9 into the model. Press them flat



10 Turn the model over. Without unfolding, repeat steps 7 to 9



11 Mountain fold the tag point into the model



12 covering the small inner flap on the left-hand side and going underneath the flap on the right-hand side



13 This shows steps 8 and 12 taking place



14 Valley fold the left-hand flap over to the right, as though turning the page of a book



15 Repeat steps 8 to 9



16 This should be the result.



17 Turn the model over. Repeat steps 15 to 16.



18 Inside reverse fold the top corners as shown.



19 This should be the result:



20 Turn the model over, then repeat step 18.



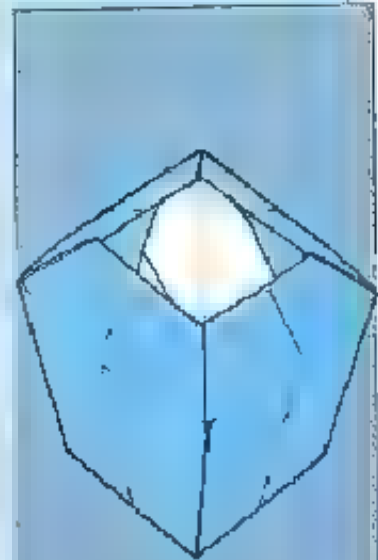
21 Valley fold the bottom point over as shown. Press it flat and unfold it.



22 Using the fold-line made in step 2 as a guide, flatten the bottom point of the model by:



23 placing a finger inside the model at the top and carefully pushing it the top sides of the vase.



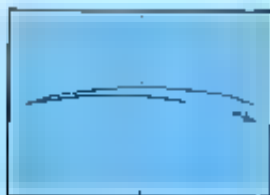
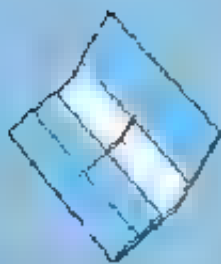
24 Here is the completed vase.

WALLET

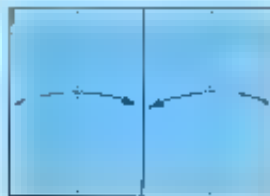
MARTIN WALL

You will find this model ideal for carrying small items, such as postage stamps and business cards.

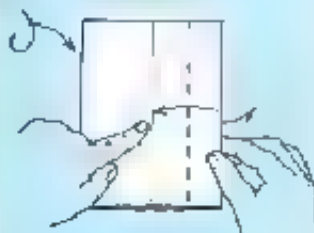
Materials: Paper 20 cm square



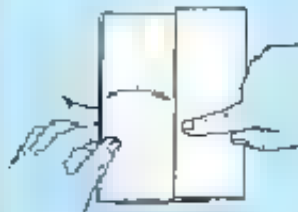
- 1 Fold the paper in half horizontally, valley fold (the bottom edge is on top). Press the paper flat and unfold it.



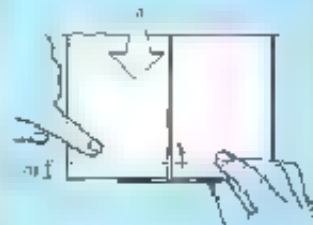
- 2 Valley fold the paper in half along the middle foldline.



- 3 Turn the paper over. Valley fold the right-hand side over to meet the middle foldline, crease at the same time.



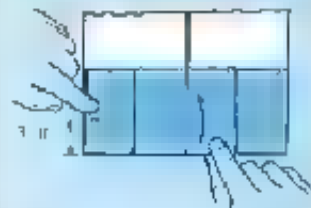
- 4 Repeat the paper from increment 3. Valley fold the left side over to meet the middle foldline, crease at the same time.



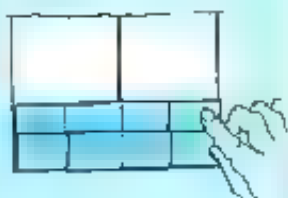
- 5 Valley fold the bottom edge up along a horizontal line that is 1 cm from the bottom edge.



- 6 Repeat step 5, but valley fold the edge up along a horizontal line that is 1 cm from the bottom edge.



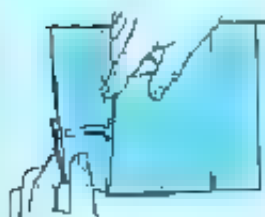
- 7 Repeat step 5, but valley fold the edge up along a horizontal line that is 1 cm from the bottom edge.



8 This should be the result



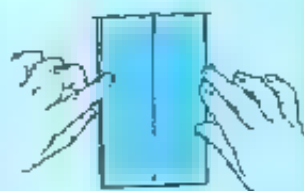
9 Turn the paper over, valley fold the sides over to meet the middle fold-line. Press them flat and unfold them.



10 Using the fold-line made in step 9 as a guide, insert the left-hand side underneath the



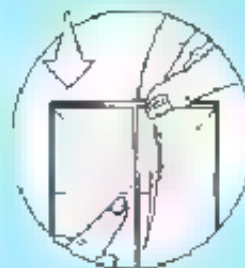
11 adjacent vertical fold-line as shown. Repeat steps 10 and 11 with the right-hand side.



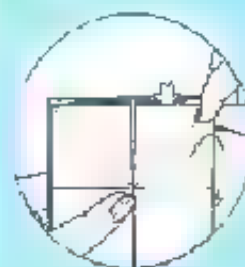
12 This should be the result



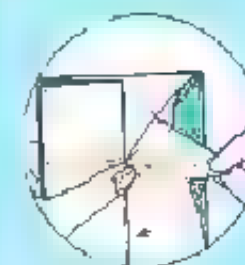
13 Turn the paper over, valley fold the middle corners over so that they lie along their adjacent sides. Press them flat and unfold them.



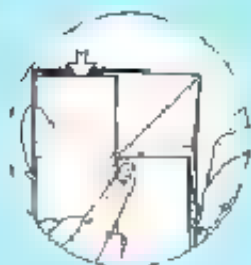
14 Using the top edge down along a line where the fold-lines made in step 13 and the vertical middle edge, intersect. Press it flat and unfold it.



15 Using the fold-lines made in steps 13 and 14 as a guide, insert the upper right-hand corner down.



16 In between the adjoining layers of paper.



17 This should be the result. Press the paper flat. Repeat steps 5 to 16 with the upper left-hand corner.



18 Valley fold the top edge down along the adjacent horizontal folded edge, at the same time.



19 Inserting the two side points, which then square the side edges as shown.



20 Mountain fold the hidden right-hand point that is to be turned in between the front and back layers of paper.



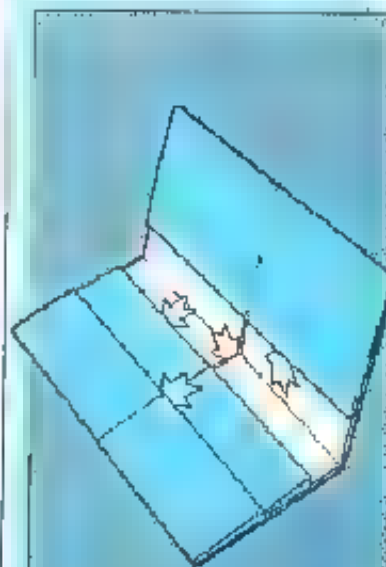
21 Close as in:



22 as it will go. Repeat steps 10 to 22 with the hidden left-hand point.



23 Valley fold the model in half from top to bottom, thereby completing the wallet.



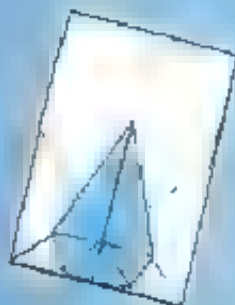
24 Here is the wallet in its opened position. The arrows indicate the various pockets that the wallet contains.

TREE ENVELOPE

JOHN CUNLIFFE

Many paperfolders like to fold models on a single theme, and John Cunliffe is no exception. He has created many items that could be considered "practical" origami.

MAKES ONE ENVELOPE



1 valley fold the square in half from bottom right to top left. Press it flat and unfold it.



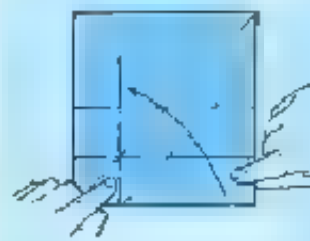
2 valley fold the square in half from bottom to top. Press it flat and unfold it.



3 valley fold the bottom edge up to meet the middle fold-line. Press it flat and unfold it.



4 valley fold the left-hand side to where the middle edge is. Press it flat and unfold it.



5 valley fold the bottom right-hand corner up to meet the fold-line made in step 4.



6 Along the existing vertical fold-line, refold the left-hand side.



7 Lift the lower left-hand section of the square and press it flat.



8 and squash it down as shown hereby making a flap of paper



9 from the flap's top point, valley fold the top and bottom sloping edges to meet the middle fold-line



10 turn the flap around into the position shown. unfold the sloping edges



11 place a finger against the flap's sides, and



12 using the existing fold-lines as a guide, bring the sides together



13 and again towards you. Press the paper down neatly, thereby making it diamond-shaped



14 lift up the diamond's bottom point, and



15 using the fold-lines made in step 9 push in its edges so that they meet in the middle (this origami technique is known as a sea fold)



16 press the paper flat, thereby making a square shape



17 Mountain fold the top-left-hand corner down until it meets the center.



18 Valley fold the left-hand side point to where the newly made folded edge and top edge intersect. Press it flat and unfold it.



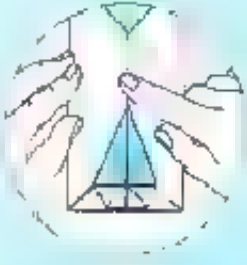
19 Open out the folded edge and squish down the paper as shown, thereby making a triangular flap.



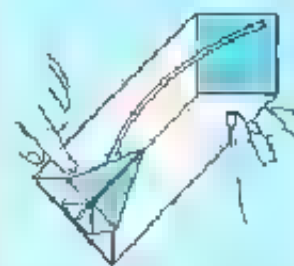
20 Valley fold the top point down and then the middle fold line at the same time, creating the triangular flap.



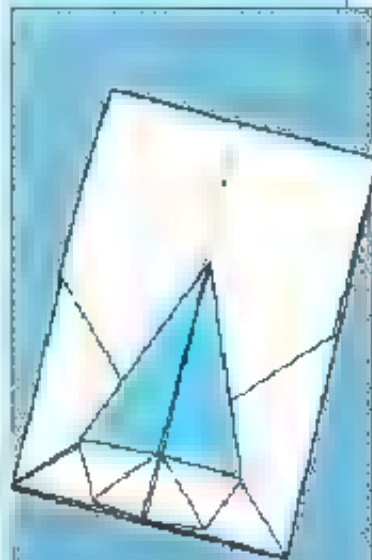
21 Behind the adjacent sloping edge, as shown.



22 This should be the result. Press the paper flat.



23 Valley fold the top point down and then the middle fold line at the same time, creating the triangular flap.



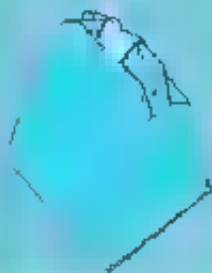
24 This is the final result.

GIFT BAG

INCE IT FLOPPED

This gift bag is very easy to make and can look very decorative. It can be made in many different sizes. Once you have learned the basic technique, many variations are possible.

Materials: 12" x 18" sheet of paper, scissors, glue.



1 Take the sheet of paper and divide it horizontally in thirds by folding, then open it up again.



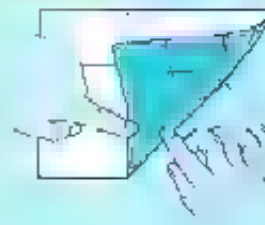
2 Valley fold the bottom right-hand corner over to meet the adjacent fold-line. Press it flat and unfold it.



3 Valley fold the left-hand side over so where the bottom edge and the fold-line meet is up. Press it flat and unfold it.



4 Valley fold the bottom edge over to meet the vertical fold-line, being sure it is



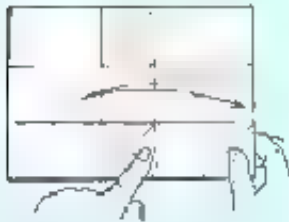
5 Press the paper only as shown by the line of dashes in step 4, unfold it.



6 Valley fold the lower third of the vertical fold-line over so meet the adjacent horizontal fold-line, as shown in steps 4, 5, and 6.



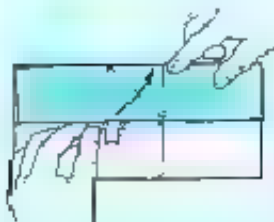
7 Repeat steps 4 and 5 with the top third of the paper, then glue the top flaps together.



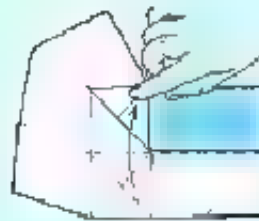
8 Valley fold the right-hand side over towards the left as shown. Press it flat and unfold it.



9 Valley fold the top edge over along the adjacent horizontal fold-line.



10 Using the existing fold-lines, open out the paper as shown, thereby making it stand upright.



11 Repeat steps 9 and 10 with the bottom edge.



12 This should be the result.



13 Turn the paper around, into the position shown. Again, using the existing fold-lines, open out the top layer of paper.



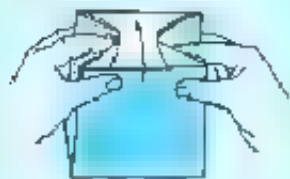
14 Once again, using the existing fold-lines, open out the remaining layer of paper, thereby



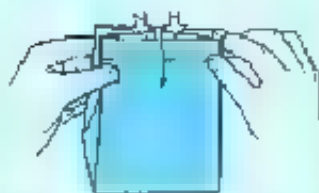
15 making a bowl-like shape.



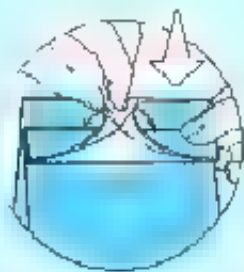
16 Place your gift inside. Push the box's sides inward so



17 at the same time bring the front and back edges together as shown



18 Treat the top three layers of paper as if they were one valley fold them down so that



19 the inside layers rise up. Flatten the folded edge of each layer to form squish folds.



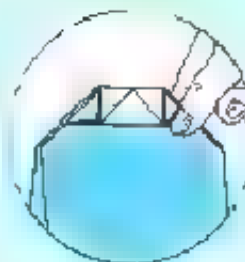
20 Treat the remaining top three layers of paper as if they were one mountain fold them down



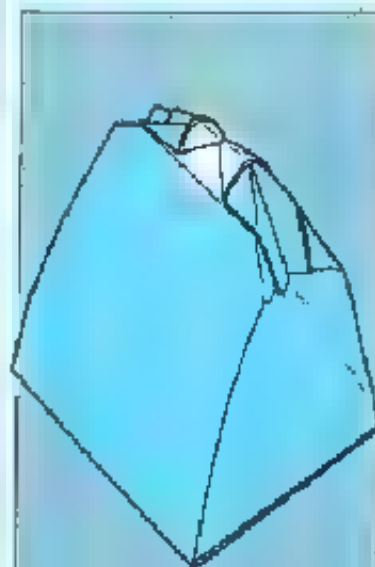
21 Mountain fold the top right- and left-hand corners of a unit down between the front and back layers of paper



22 Valley fold the remaining top corner of a unit down between the front and back layers of paper thereby



23 closing up the top of the gift bag.



24 Here is the completed gift bag.

SAILING BOAT NOTEFOLD

STEVE BODLE

This model is based on the traditional ongan sailing boat. It would make the ideal invitation note for a party.

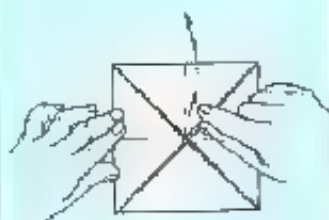
6. A SQUARE OF PAPER OF ANY SIZE OF



1 Turn the square around to look like a diamond. Valley fold the opposite corners together in turn to mark the diagonal fold-lines, then open up again.



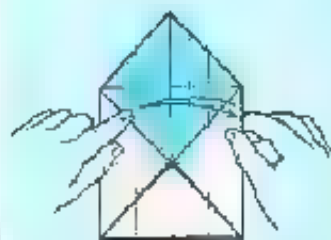
2 Valley fold the corners into the middle, thereby making a blintz base.



3 Unfold, only middle corners shown.



4 Valley fold the sides over to meet the middle fold-line. Press them flat and up to 6 them.



5 Valley fold the right-hand side over to meet the left-hand vertical fold-line made in step 4. Press the paper only as shown by the line of dashes, then unfold it.



6 Valley fold the left-hand side over to meet the right-hand vertical fold-line made in step 4. Press the paper only as shown by the line of dashes, then unfold it.



7 Valley fold the paper in half from top to bottom, thereby making a flap.



8 Valley fold the top corners over to meet their adjacent vertical fold-lines. Press them flat, and unfold them.



9 Along the existing fold-lines, mountain fold the flap a right-hand edge behind itself at the same time.



10 Inside reverse folding, the top right-hand corner down into the model, as shown.



11 This should be the result. Repeat steps 9 and 10 with the top left-hand corner.



12 Valley fold the top edge over to meet the adjacent horizontal fold-line.



13 Lift up the flap, thereby making the inside layers the up.



14 Flatten each layer to either side as shown.



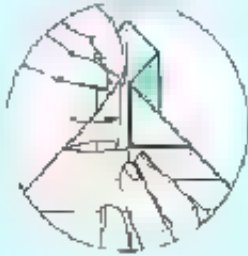
15 Valley fold the flap's concealed corners down.



16 This shows step 15 being placed.



17 Turn the model over. Valley fold the flap's sides over to meet the middle fold-line at the same time.



18 Opening out the concealed box flaps.



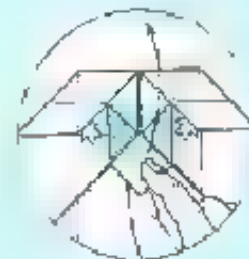
19 Turn the model over. Valley fold the flap down on a line between the two side points, as shown.



20 Valley fold the two side points over to meet the middle fold-line.



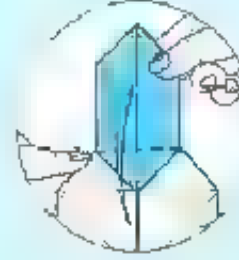
21 Inside reverse fold the side points up into the model.



22 Pull up the flap, thereby taking the sides up along the foldlines made in step 4.



23 Pulling out the side point to meet the middle fold-line.



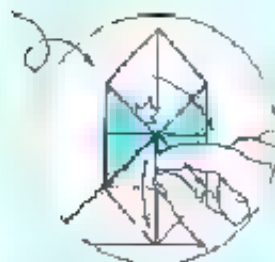
24 Valley fold the flap down on a line between the two side points, as shown. Press it flat and unfold it.



25 Valley fold the flap's right-hand side over to meet the fold-line made in step 24. Press it flat and unfold it. Repeat with the flap's left-hand side.



26 valley fold the flap in half. Press the paper down and unfold it.



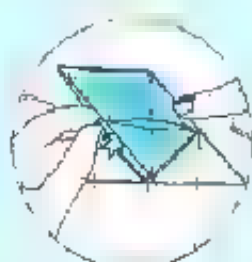
27 Turn the model over. using the existing fold-lines, open out and squash down the flap's left-hand side as shown.



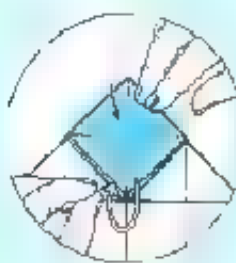
28 Using the existing vertical fold-line, valley fold the flap over to the right thereby



29 making it stand upright. Once again, using the existing fold-lines, open out the flap's right-hand side. Press the paper down neatly, thereby making a triangular flap that points to the left.



30 Open out the triangular flap and squash it down neatly into a diamond.



31 Mountain fold the diamond's bottom point up behind itself (to the top), thereby making an upside-down sailing boat shape.



32 Shape the boat's hull with a mountain fold.



33 valley fold the boat's left-hand side thereby making a peak.



34 Insert the peak inside the boat.



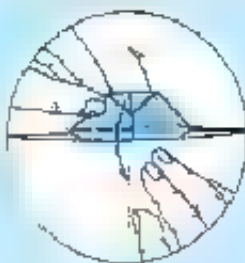
35 This should be the result



36 Turn the model over: valley fold the bottom edge up to meet the fold-line made in step 24, at the same time



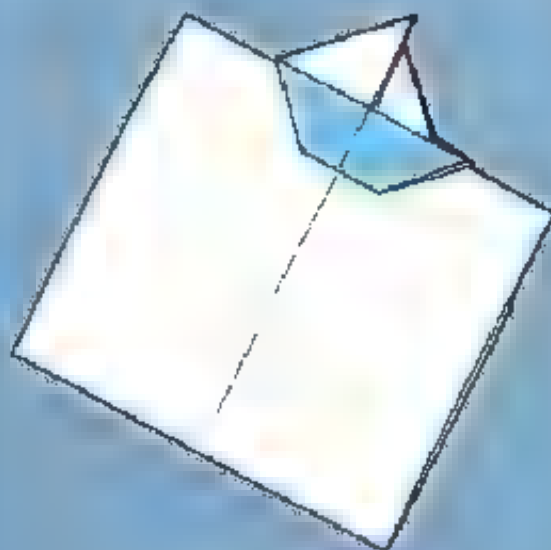
37 Inserting the bottom two middle points behind their adjacent sloping edges, as shown



38 Swing the sailing boat around



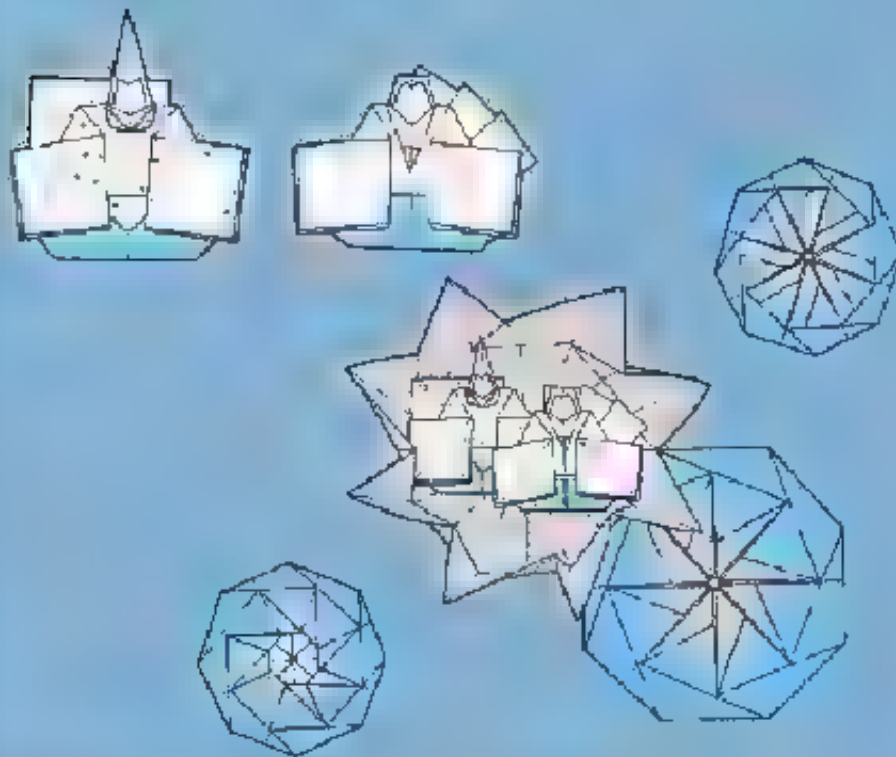
39 In this case, Press the paper flat thereby



40 unfolding the sailing boat model

KASANE ORIGAMI

Kasane origami is the name given to layered paper-folding, a technique in which several (four or more) sheets of differently coloured paper are overlaid on their ribbons of different colours run along either one edge or two adjacent edges. These overlaid sheets are then treated as a single item and folded together in the final stages of making the model. This technique is useful for creating layered forms, such as the Hingyo (traditional Japanese dolls) and Tami (folded paper purses).



HINA RINGYO

TRADITIONAL
INTRODUCED BY
MEGUMI BIDDLE

The dimensions given in the instructions for making this model are only approximate as traditionally they were measured by eye and only personal experience can tell you how far to cut and fold.

PLEASE NOTE: THE FIRST SQUARE IS THE ONLY ONE THAT IS NOT THE SAME SIZE AS THE OTHERS. IT IS THE ONLY ONE THAT IS NOT THE SAME SIZE AS THE OTHERS.



Emperor



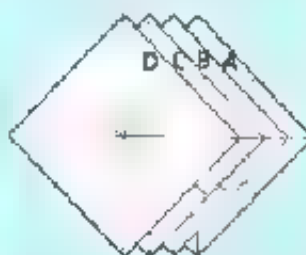
1 As a help during assembly, label the squares with a pencil as follows: patterned A, colored B, white C, and piece D. Arrange the four squares as shown, with the colored/patterned sides on top.



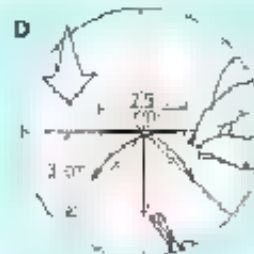
2 Treating the squares as if they were one, turn them over. Valley fold the opposite corners together in turn to mark the diagonal fold-lines, and open them up.



3 Again, treating the squares as if they were one, valley fold the opposite sides and edges together in turn to mark the vertical and horizontal fold-lines, and open them up.



4 This should be the result. Separate the squares from each other.



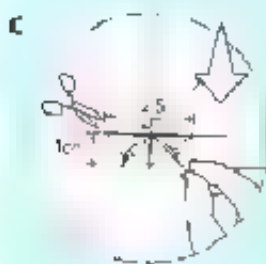
5 To make the various colors of each square as shown, Square D: In the square's middle and stem, its diagonal fold-line, make a T-jogged cut with a width of 2.5 cm (1 inch) and a length of 3 cm (1 1/2 inches). Valley fold the middle corners over on.



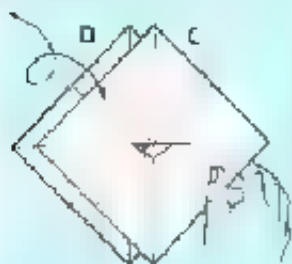
6 A line between the top and bottom of the "T".



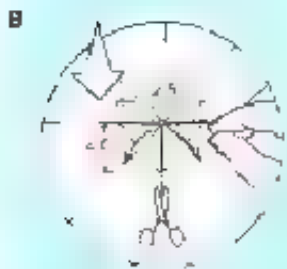
7 Turn the paper over.



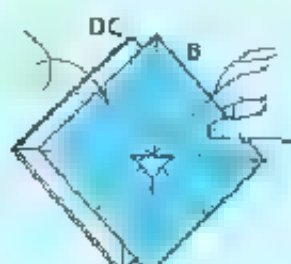
8 Square C: Repeat steps 5 and 6, but make a trapezoidal cut with a width of 2.5 cm (1 inch) and a length of 2 cm (3/4 inch).



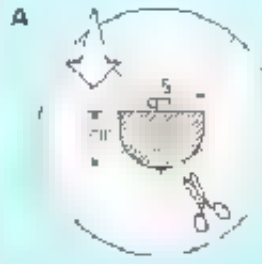
9 Turn square C over and place it on top of square D.



10 Square B: Repeat steps 5 and 6, but make a trapezoidal cut with a width of 2.5 cm (1 inch) and a length of 2 cm (3/4 inch).



11 Turn square B over and place it on top of squares C and D.



12 Square A: In the square's middle and along its diagonal fold-lines, cut out a U-like shape with a width of 2.5 cm (1 inch) and a length of 2 cm (3/4 inch). Discard the shaded part.



13 Turn square A over and place it on top of squares B, C and D.



14 Make sure that the squares are arranged as in step 13. You should now be able to see the various flaps.



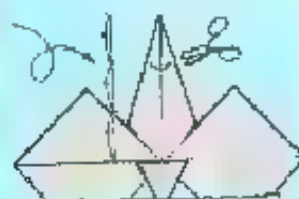
15 Join the two squares A—they were one, turn them over! Again, treat the squares as if they were one, from the outside corner edge and slide to the other side of the way to the middle, separate the squares from each other.



16 Square D: From the top corner valley, fold the right-hand sloping edge over one-third of the way, as shown. Repeat with the left-hand sloping edge, so



17 Lift it *up* and makes a point as shown.



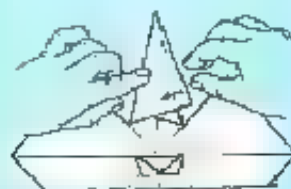
18 Turn the paper over. In the point's *opposite* *layer* make a V-shaped cut, as shown.



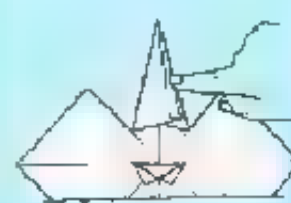
19 Square C. From the top corner *where* fold the *right-hand* sloping edge over as far as possible.



20 Repeat step 19 with the *left-hand* sloping edge.



21 Valley fold the protruding right-hand flap over and towards the left on a line with the underneath sloping edge. *so*



22 Lift it *up* and makes a point as shown.



23 Turn square C over and insert its point into the V-shaped cut of square B's point. Push the point up inside as far as it will go thereby making the Emperor's head.



24 Mountain fold and insert the head into the triangular hole. You may have to *enlarge* the hole slightly first.



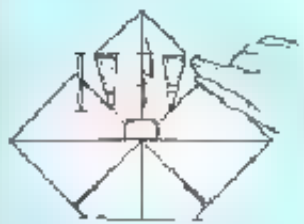
25 Trading both squares as if they were one, make the horizontal mountain fold as shown, at the same time.



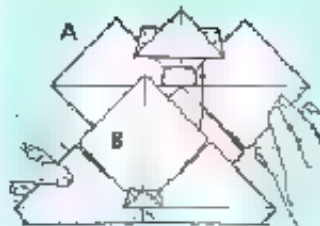
26 Rotate the head around to the left.



27 Square A. Turn the paper around into the position shown. Valley fold the side corners of the top section of paper in on a line.



28 Step fold the top section of paper as shown.



29 Square B. Turn the paper around into the position shown. Place on top of square A.



30 Insert the emperor's head through the hole. Once again, you may have to make adjustments. Arrange the squares so they lie neatly on top of each other.



31 Treating the squares as if they were one, valley fold them in half (but not the head) from top to bottom.



32 Valley fold the left-hand point down as shown.



33 Valley fold the point back up as shown.



34 Open up the point and square it down neatly towards the top, thereby making the emperor's right shoulder and sleeve.



35 Repeat steps 32 to 34 with the right-hand point thereby



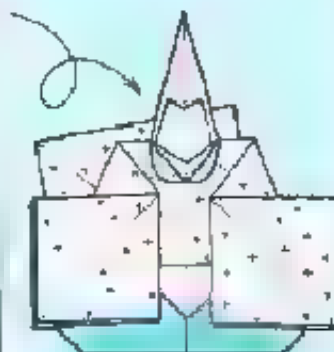
36 along the Emperor's left shoulder and curve



37 turn the model over valley fold the bottom over up paper up and down with right



38 On either side mountain fold the lower corners up inside the model



39 Turn the model over to complete the Emperor

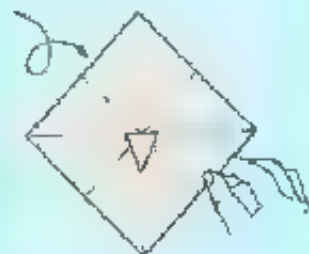
Empress



40 As a help during assembly, label the squares with a pencil as follows patterned W coloured X white Y and black Z Repeat steps 30-4



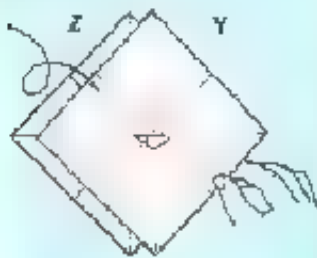
41 To make the various folds, cut each square as shown Square Z Repeat steps 5 and 6, but make a T-shaped cut with a width of 2.5 cm (1 inch) and a length of 3 cm (1 1/4 inches).



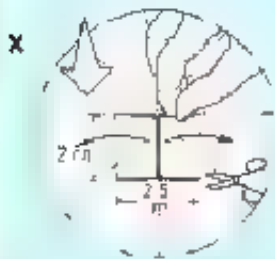
42 turn square 2 over



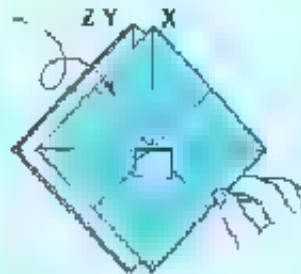
43 Square Y. Repeat steps 5 and 6, but make a T-shaped cut with a width of 2.5 cm (1 inch) and a length of 1 cm (3/8 inch).



44 Turn square Y over and place it on top of square Z.



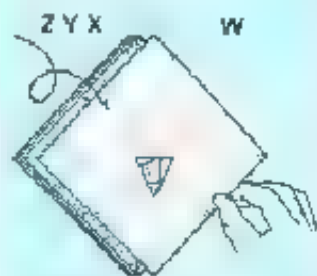
45 Square X. In the square, middle and along its diagonal ink-lines, make an T-shaped cut with a width of 2.5 cm (1 inch) and a length of 2 cm (3/4 inch). In each valley fold the middle flaps over, on a line between the top and bottom of the 2 arms, as shown.



46 Turn square A over and place it on top of squares Y and Z.



47 Square W. Repeat steps 5 and 6 but make a T-shaped cut with a width of 2.5 cm (1 inch) and a length of 2 cm (3/4 inch).



48 Turn square W over and place it on top of squares X, Y and Z.



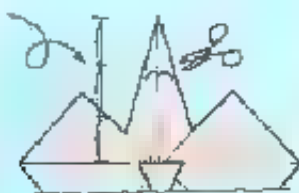
49 Make sure that all squares are arranged as in step 48. You should now be able to see the various covers.



50 Repeat step 5.



51 Square Z. Repeat steps 6 and 17.



52 Turn square **u** over. In the point's topmost layer, make an M-shaped cut as shown.



53 Square **v**. Repeat steps 9 to 22.



54 Turn square **v** over and insert its point into the M-shaped cut of square **z**'s point. Push the point up inside as far as it will go, hereby making the Empress's head. Now repeat steps 24 to 26.



55 So are **w**. Turn the paper around into the position shown. Valley fold the side corners of the top section in, so that they both make a vertical edge.



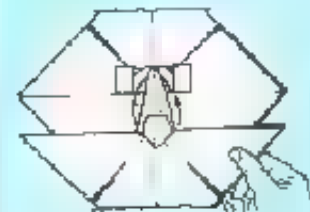
56 Valley fold the top point down to meet the nose.



57 Repeat step 56 with the top edge.



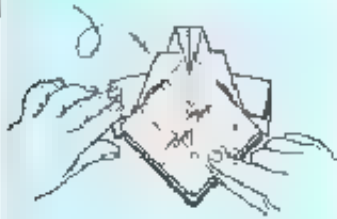
58 Square **h**. Turn the paper around into the position shown. Place it on top of square **v**.



59 Repeat steps 50 to 55.



60 Shape the top as the Empress's head with a mountain fold.



61 Turn the model over. Step fold the topmost layer of paper as shown.



62 Valley fold the topmost layer of paper up and across a triangle.



63 Repeat step 36.



64 Turn the model over to complete the Emperor.



65 Fold the Emperor's topmost layers of paper down slightly so that they will be able to stand.



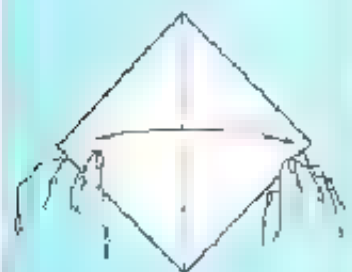
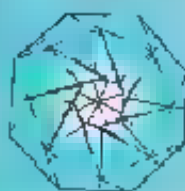
66 When assembling the dolls make sure to place the Emperor on the left-hand side and the Empress on the right-hand side as shown.

TATO HANAMON DRI

FASTONAL
REDUCED RY
M C S B D E

This traditional type of Japanese folded paper makes an ideal container for the Hina Matsuri (see page 88) also often take on the form of hexagonal or octagonal stylized flower patterns

MA
TATO
HANAMON DRI



1 Turn one square around to look like a diamond. Valley fold it in half from side to side, then fold it in half from top to bottom.



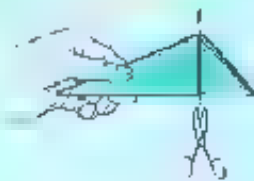
2 Valley fold the triangle in half from top to bottom.



3 Valley fold the triangle's top left-hand corner down to meet the bottom right-hand point. Repeat behind.



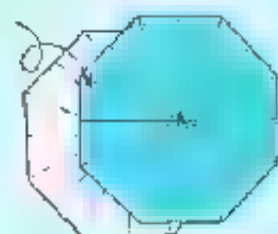
4 Valley fold the triangle's top left-hand sloping side over to lie along the bottom edge. Repeat behind.



5 Cut along the side of the vertical fold as shown. Discard the small right-hand triangle of paper.



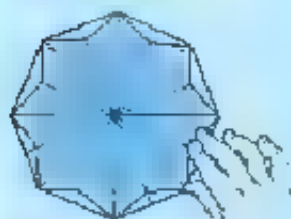
6 Open out the remaining triangle into an octagon. Repeat steps 1 to 5 with the remaining square.



7 Join the octagons over. Place them together with the white sides inwards.



8 Treat the corners as if they were one, valley fold the eight corners over at once.



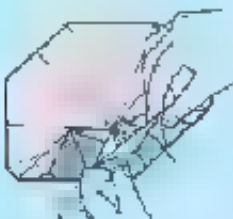
9 This should be the result.



10 Turn the paper over. Valley fold the bottom edge over to meet the middle, thereby making a flap on top.



11 Open out the flap on right-hand side to it at the same angle.



12 Swing the adjacent edge of the octagon over to meet the middle. Press the paper flat into the position shown in step 11.



13 Repeat steps 11 and 12, swinging anti-clockwise around the model. Most of the creases shown already exist. Some will have to be made.



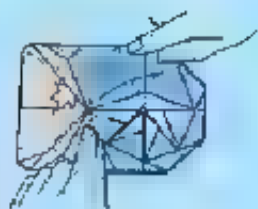
14 Following the instruction, carefully swing this edge over to meet the middle.



15 Remember to hold carefully as you open out the flap's right-hand side.



16 You are now ready to complete.



17 With a little patience, open out the flap, as shown.



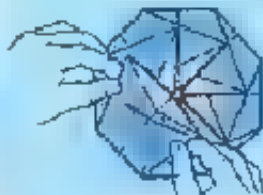
18 Don't give up hope - you're nearly there!



19 Open out the perultimate flap while at the same time



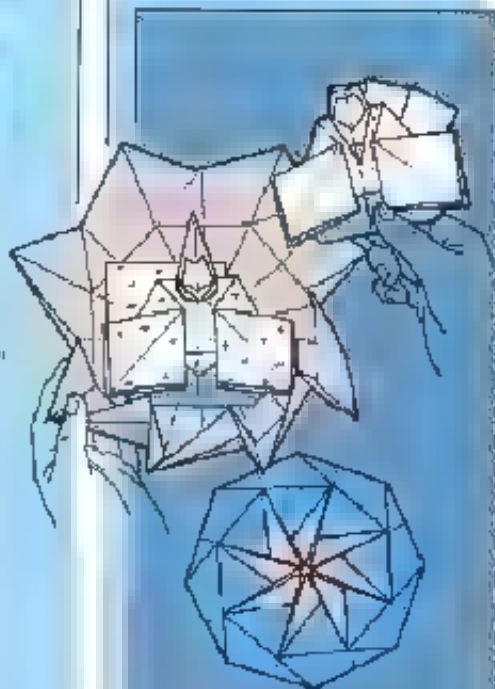
20 Pulling out the remaining flap at once. Press the paper flat as in the position shown in step 21.



21 Finally, fold the remaining flap - right-hand side over - so that it lies between the bottom flap and the outside middle flap. Press the paper flat, thereby

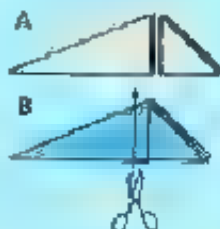


22 completing the job.

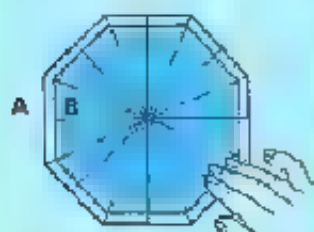


23 In case you have any doubts, the model will return to its original form.

Variation 1



1 Repeat steps 1 to 4 of the book on page 106 with each square. Use the triangles A and B. Cut along the vertical edge of triangle A. Discard the small right-hand triangular piece of paper. Cut triangle B as shown. Discard the right-hand piece of paper.



2 Open out triangles A and B into octagons. Place the octagons together as shown, with their coloured sides on top.

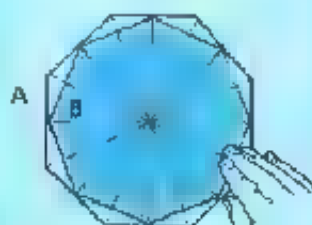


3 Treating the octagons as if they were one, repeat steps 5 to 22 of the book on pages 107 to 108.



4 Here is the completed variation 1.

Variation 2



5 Repeat steps 1 to 6 of the book on page 106 with each square. Place the octagons together as shown, with their coloured sides on top.



6 Treating the octagons as if they were one, turn them over and attach, into the position shown, valley fold the bottom point up, so that the fold-lines on either side and the adjacent underneath horizontal edge meet in the middle, thus making a flap.



7 Open out the flap's right-hand side at the same time.



8 Swinging the adjacent underneath flap's outer edge over to lie along the middle. Continue repeating steps 7 and 8 anti-clockwise around the middle. Most of the creases shown already exist; some will have to be formed. In effect, repeat steps 4 to 6 of the book on pages 107 to 108.

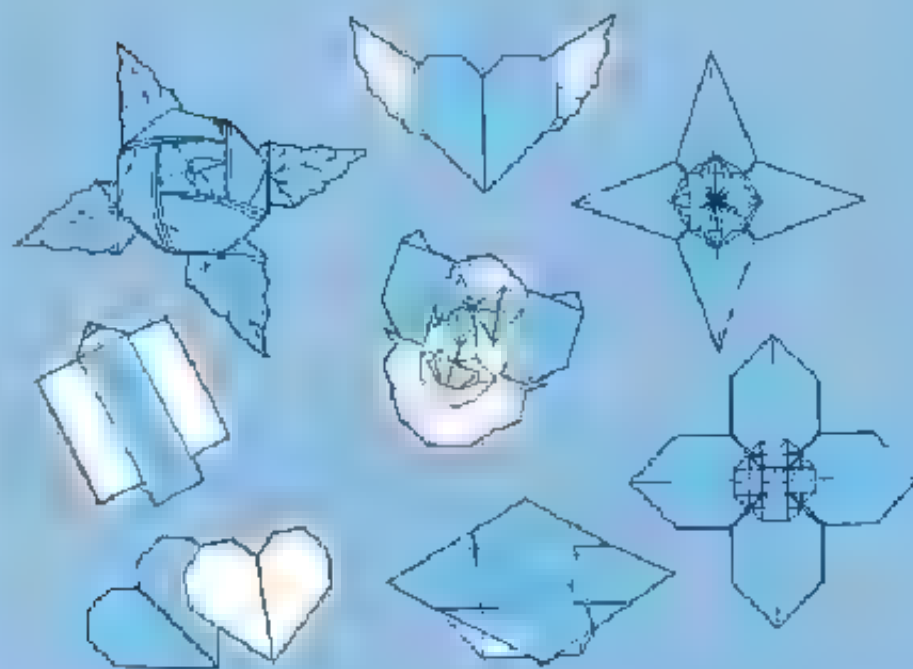


9 Here is the completed variation 2.

SYMMETRY AND BEAUTY

Organic models such as multiple unfolding, pleating and petal folding, are perhaps the most advanced of all origami techniques, but with the correct preparation and practice they are no more difficult than other techniques. Multiple pleating takes many folds, and it can be used to produce a variety of symmetrical forms. By pleating the paper, and then stretching or spreading the shape, it is possible to transform a piece of paper into a beautiful three-fold flower. Petal folding is employed in the making of the bird for a bird base. This base is thought by many practitioners to be the keystone to avian origami.

As we have already said, many paper models are a fold model, or a multiple pleat. For example, a well-known Singapore bird artist specialises in folding all his models, all of which are featured in this chapter.

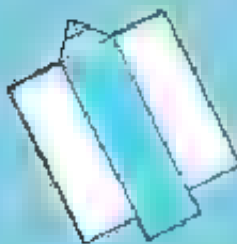


PENCIL AND PAPER

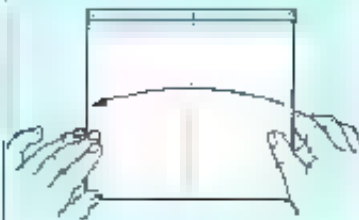
MEDIUM BIDDLE

This model makes an ideal decoration for a piece of notepaper or personal stationery. It is based upon a model that was originally created by Takemasa Hasebe.

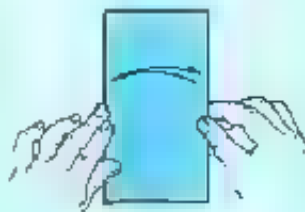
15 x 20 CM (6 x 8 INCHES) A4 SIZE (14)



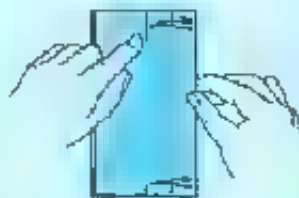
1 Valley fold down a inch of the top edge.



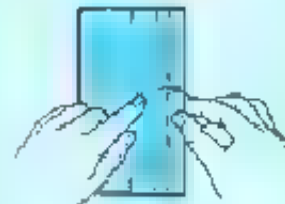
2 Valley fold the paper in half from right to left.



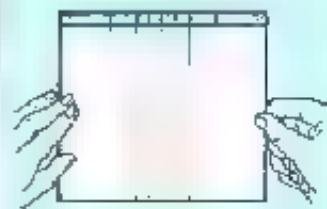
3 Again, valley fold the paper in half from right to left, but do not press the paper completely flat. Press down on it only a little at the top and bottom points, then unfold it.



4 Valley fold the right-hand side over to meet the fold-marks made in step 3. Press it flat and unfold it.



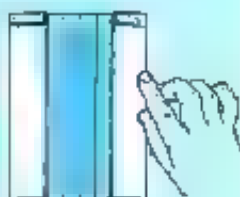
5 Valley fold the right-hand side over to meet the fold-line made in step 4. Press it flat and unfold it.



6 Open out the paper from left to right.



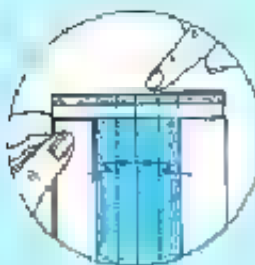
7 Turn the paper over. Valley fold the sides over to meet the fold-lines made in step 4.



8 This should be the result



9 Turn the paper over. Valley fold the bottom edge up as far as shown.



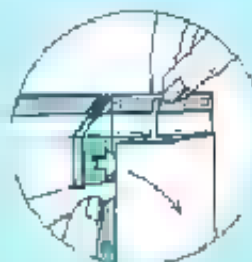
10 Along the fold-lines made in steps 8 and 9, step fold the middle section of paper. You will have to reverse some of the directions.



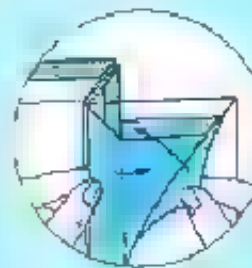
11 Inside reverse fold the middle section's top corners, thereby making the pencil.



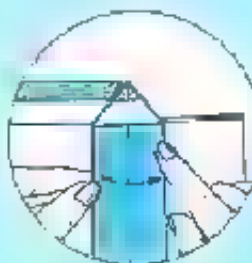
12 Valley fold the pencil in half (close right to left).



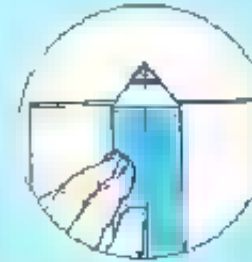
13 valley fold the right-hand half of the top edge down, at the same time



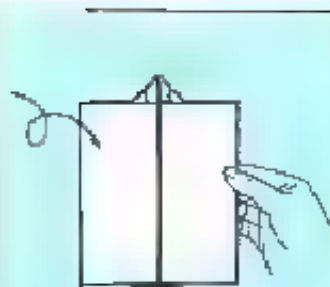
14 insert the pencil underneath the adjacent layer of paper. Valley fold the pencil's top layer back over.



15 valley fold the pencil in half from left to right. Repeat steps 8 to 14 with the left-hand half of the top edge.



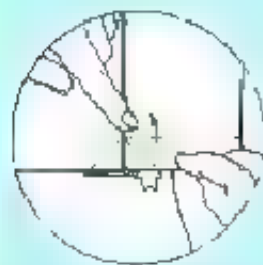
16 This should be the result



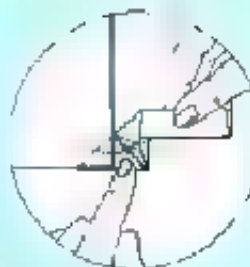
17 Turn the model over



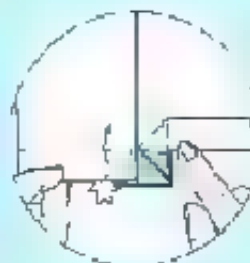
18 valley fold the middle corner over, so that they lie along the underneath vertical edges. Press them flat and unfold them



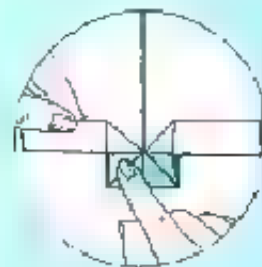
19 valley fold the right-hand half of the bottom edge up, so that the adjacent middle corner rises up



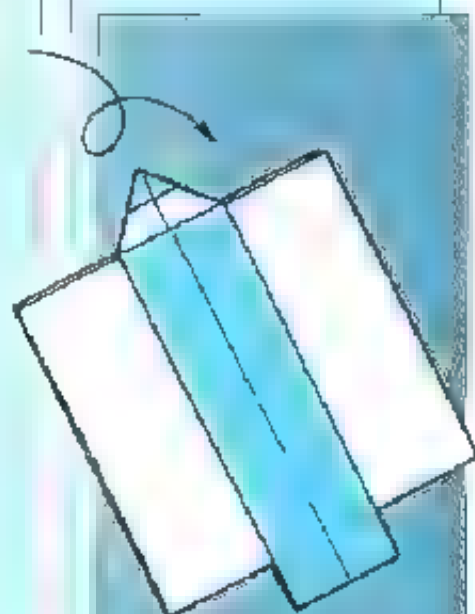
20 Along the fold-lines made in step 18, squash the corner's folded edge down



21 Repeat steps 18 to 20 with the left-hand half of the bottom edge



22 This should be the result



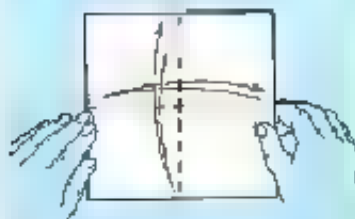
23 Turn the model over, thereby crease along the pencil and paper

DISH

DIDIER BOURSON

Didier Bourson specializes in creating models that have a clean and elegant line, of which this dish is a perfect example.

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1 Valley fold the opposite sides and top and bottom edges together in thirds so mark the vertical and horizontal fold-lines, then open up again.



2 Turn the paper over. Valley fold the corners in to the middle vertically.



3 making a square base



4 Turn the paper over and around, into the position shown. Valley fold the top and bottom edges over to meet the middle fold-line at the same time.



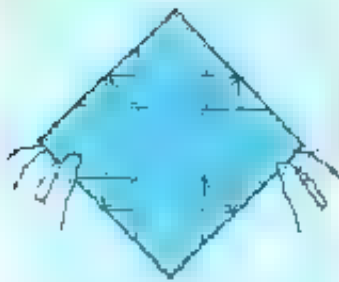
5 letting the corners from underneath flick up. Press the paper flat. Return the top and bottom edges to their original position.



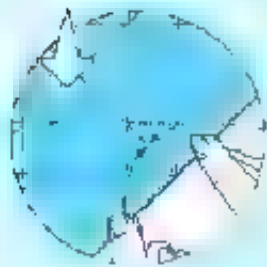
6 valley fold the sides over to meet the middle fold-line at the same time.



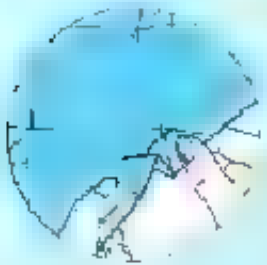
7 letting the corners from underneath flick up. Press the paper flat.



8 Fold the paper completely



9 Working on one open edge and using the ruling water and mountain technique



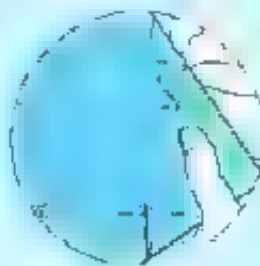
10 Join one side of the fold to the other. In step 9 most of the creases shown already exist, only the inner sloping mountain fold will have to be formed when making a sharp triangle's top



11 Mountain fold the triangular flap down



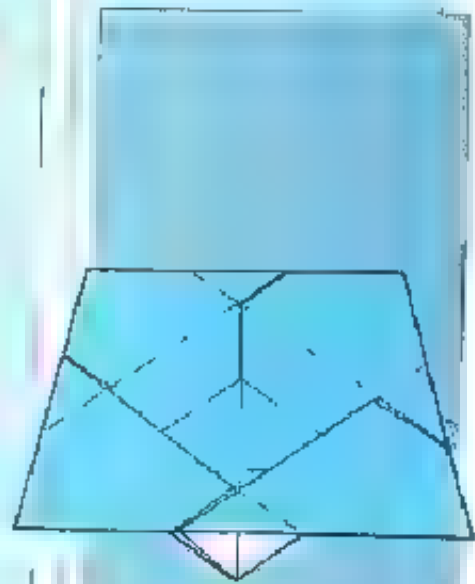
12 Slide the model, thereby locking up all the folds together



13 Repeat steps 9, 10



14 11 and 12 are likewise around the model, thereby forming the dish's remaining top edge



15 Here the completed dish

ON THE WINGS OF LOVE

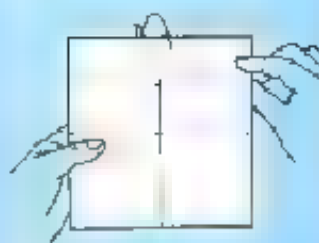
FRANCIS T.W.

This model is carrying a hidden message, perhaps a message of love.

1 x SQUARE OF PAPER WHICH SERVES AS



1 Valley fold the opposite sides and top and bottom edges together in turn, mark the vertical and horizontal fold-lines, then open up again.



2 Mountain fold the top edge behind to meet the middle fold-line.



3 Valley fold the bottom corners up to meet the middle fold-line, thereby making a shape that looks like an upside-down roof.



4 Valley fold the sides in to meet the middle fold-line. Press them flat and unfold them.



5 Using the fold-lines made in step 4 as a guide, inside reverse fold the sides into the upside-down roof as shown.



6 Open out the paper again and square the corners and cut the top edge down as shown. Squash the paper down neatly into the shape of a triangle. Repeat this step with the upper left-hand layers of paper.



7 Mountain fold the bottom edge behind to meet the top edge, so that



8 The inside layers rise up. Press them flat into the position shown in step 5.



9 Valley fold the inside wings down to meet their adjacent vertical edges.



10 Valley fold the bottom points up to meet the adjacent horizontal edge.



11 Divide the roof-like sections of paper into quarters by valley folding. Press it flat, then unfold it.



12 Flatten the roof-like section of paper into eight by mountain and valley folding as shown. Note that the valley folds take place along symmetry lines.



13 Step fold the pleats of adjacent layers of paper as shown, thereby



14 Forming the wings. Spread them out a little.



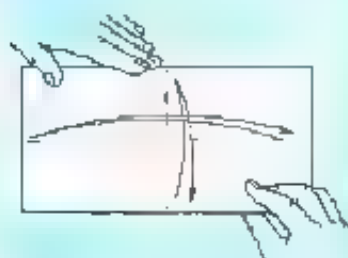
15 To now plane with the model, refer

DOUBLE HEARTS

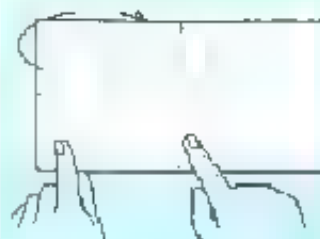
FRANCIS DOW

As this model is flat, it can be contained in an envelope together with your love letters or greetings cards.

It will take you about 15 minutes to make.



1 Place the rectangle sideways on. Valley fold the opposite sides and top and bottom edges together in turn to mark the vertical and horizontal fold-lines, then open up again.



2 Mountain fold the left-hand side behind to meet the middle fold-line.



3 Valley fold the corners down to meet the horizontal middle fold-line, thereby creating 'valley' and 'mountain' folds.



4 Valley fold the top and bottom edges over to meet the middle fold-line. Press them flat and unfold them.



5 Using the fold-lines made in step 4 as a guide and treating the left-hand layers of paper as if they were one, inside reverse fold the top edge into the adjacent folds.



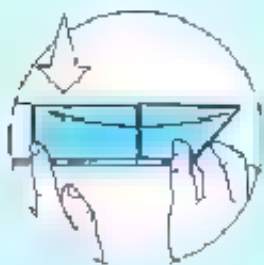
6 Repeat step 5 with the bottom edge.



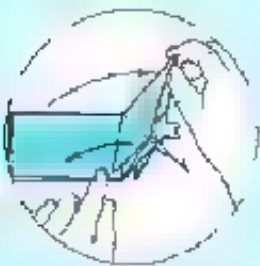
7 This should be the result.



8 Turn the paper over. Valley fold it in half from top to bottom.



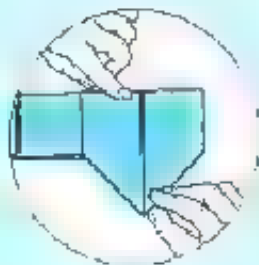
9 Valley fold the right-hand point over to meet the left-hand vertical edge.



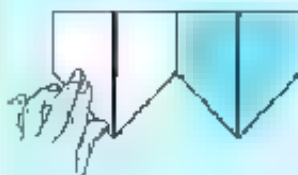
10 Lift the right-hand point up. Pull out the point and



11 Squash it down neatly.



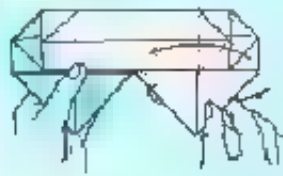
12 into a heart-like shape as shown.



13 Repeat steps 10 to 12 with the left-hand point.



14 Turn the paper over. Valley fold the front top edges. But not the middle section of paper. Pull down to meet the horizontal folded edge. So that the top corners rise up. Squash them down flat.



15 Swing the right-hand heart around to the front.



16 Repeat step 9 with the left-hand point.



17 This should be the result



18 Repeat step 14.



19 Valley fold the middle section of paper down to meet the horizontal folded edge, thereby making a bridge



20 Valley fold each heart's middle corners over to meet the adjacent horizontal edges.



21 Valley fold each heart's top points down a little



22 Step fold the bridge to adjust the position



23 of the hearts



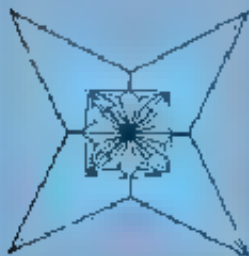
24 is complete, with the heart over

★ STAR ★

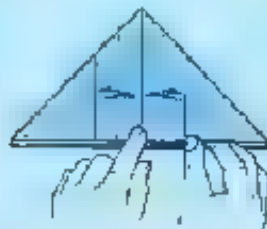
MEGUMI 8 DOLE

This model looks most beautiful if made out of shiny metallic foil (the kind that is used for gift wrapping).

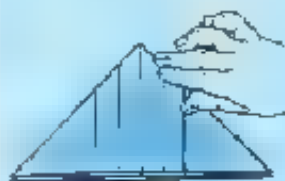
5-57 (80-90cm) will do it.



1 Begin with a waterbomb base (see page 26, steps 1 to 6). Valley fold the top right-hand flap of paper over to a point two-thirds of the distance to the opposite side. Press it flat and unfold it. Repeat this step with the top left-hand flap.



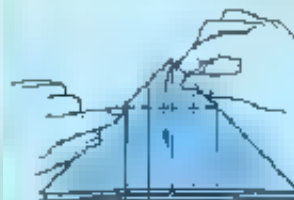
2 Valley fold the top point down to meet the middle fold-line. Press down flat and unfold them.



3 This should be the result.



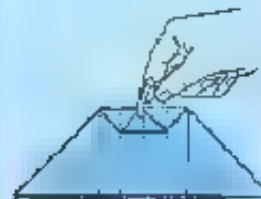
4 Turn the paper over. Repeat steps 1 and 2 with the top right and left-hand flaps of paper.



5 Valley fold the top point down on a line between the old lines made in step 1.



6 Valley fold the point back up to give the middle of the top edge.



7 This should be the result. Press the point flat and unfold it.



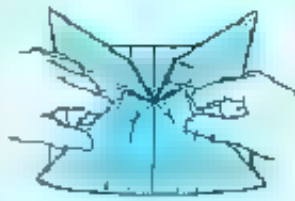
8 Double over the top point. This is what you do:



9 Repeat step 3 of the link on page 15, creasing along the fold-lines made in step 3. Pinch the inner squares at opposite corners and, working towards the middle, make the point rise up along the fold-lines made in step 3. Finally collapse the paper into the position shown in step 10.



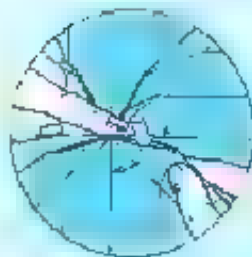
10 Open out the model from the inside, thereby:



11 making the four flaps rise up:



12 valley fold the top-over to meet the middle fold-lines. Press them flat and unfold them.



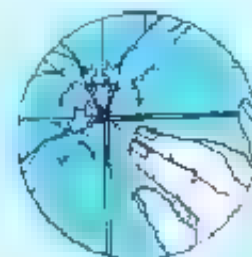
13 Open out one flap and:



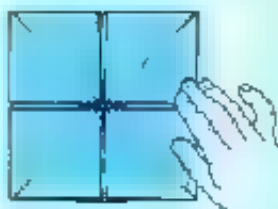
14 squash it down into the middle as shown, thereby making its adjacent corner rise up:



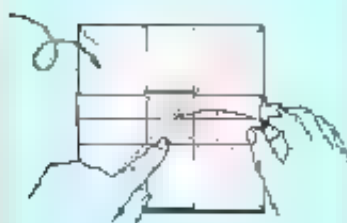
15 Along the fold-lines made in steps 1 and 2, open out and squash down the corner:



16 This should be the result. Repeat steps 3 to 5 with the remaining three flaps:



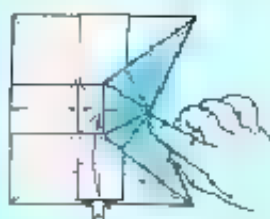
17 This should be the result



18 Turn the model over valley fold one 'pleated' section of paper over to meet the middle, thereby



19 making the adjacent edges rise up. Flatten the edges down



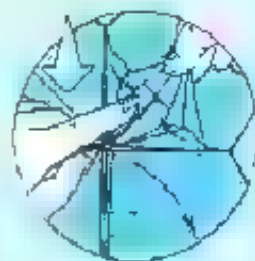
20 to form squash folds, as shown. With out turning the model over repeat steps 18 to 20 working clockwise around the model



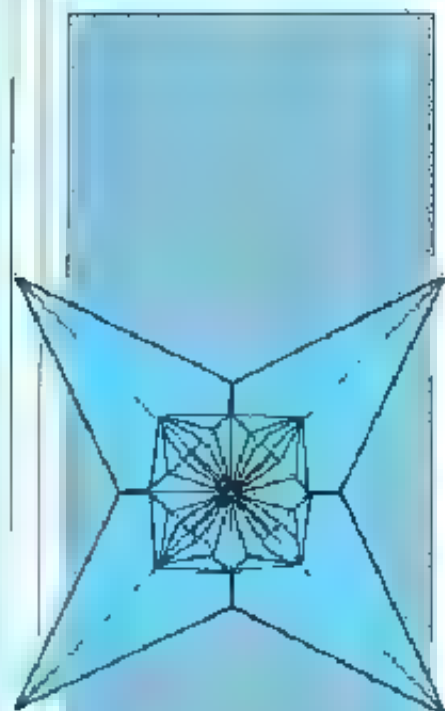
21 Arrange the flattened edges to fit one over the other



22 Turn the model over valley fold the four middle points out, thereby



23 making their underneath layers of paper rise up



24 Here is the completed star

ROSE BROOCH

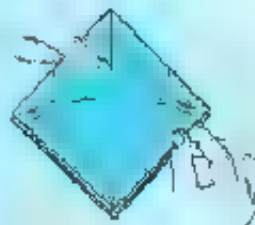
5 E
A F O A M O

Have fun folding this model, as you will learn how to fold a very important origami base.

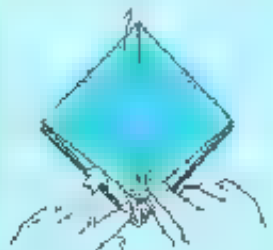
10.31.19



1 Begin with a premarked fold (see page 80, steps 1 to 6). Valley fold the lower (open) sloping edges over, so they lie along the middle fold-line. Press them flat and unfold them.



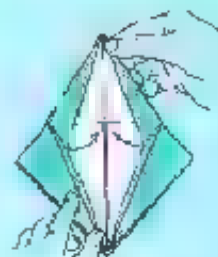
2 Valley fold the top point down to the center between the fold-lines made in step 1. Press it flat and unfold it. Now make a petal fold. This is what you do.



3 Pinch the lower (open) sloping edges of the paper.



4 Continue to lift up the front flap of paper so



5 Bring its edges inward to the middle.



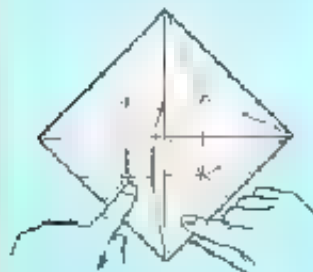
6 Press the paper flat, thereby making it diamond-shaped. This completes the petal fold.



7 Turn the paper over. Valley fold the lower (open) sloping edges over so they lie along the middle fold-line. Press them flat and unfold them. Repeat steps 2 to 6, thereby



8 making a very important shape (that in origami is called the bird base. The bird base comes in two forms, either as shown here, or with its top flaps valley folded down in from any behind.)



9 Open out the bird base completely, with the white side on top. valley fold the bottom point up along a line that uses the intersection of the lower fold-lines as its location point.



10 The following folds take place along existing fold-lines. Mountain fold the point's sloping edges behind to lie along the vertical middle fold-line at the same time letting the lower right- and left-hand sloping edges swing up to meet the horizontal middle fold-line. Press the paper flat, hereby making a point.



11 Valley fold the point over towards the left.



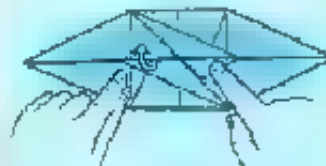
12 Valley fold the top point down along a line that uses the intersection of the upper fold-lines as its location point.



13 Repeat step 10 with the top point, at the same time letting the upper right- and left-hand sloping edges swing down to meet the horizontal middle fold-line.



14 valley fold the point over towards the right.



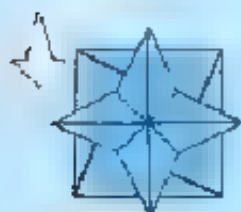
15 Roll up the point from underneath the top layer of paper.



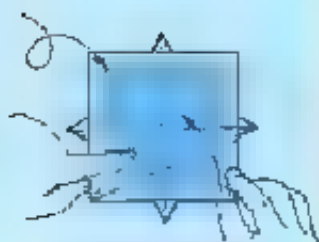
16 Step fold the right-hand point as shown, at the same time inserting it underneath the adjacent point.



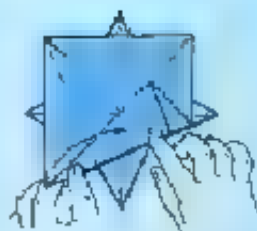
- 17** Step fold the left-hand point as shown at the same time inserting underneath the adjacent point



- 18** This should be the result



- 19** Turn the model over. From the bottom left-hand corner, valley fold the bottom edge up to meet the diagonal fold-line



- 20** From the top left-hand corner, valley fold the left-hand side over to meet the diagonal fold-line



- 21** From the top right-hand corner, valley fold the top edge down to meet the diagonal fold-line



- 22** Inside reverse fold the right-hand side as shown, thereby making an 'inner' diamond



- 23** Valley fold the diamond's lower left-hand side point as shown, at the same time letting the paper arrange half into a sort of petal fold



- 24** Repeat step 23 with the diamond's lower right-hand side point. In the same time inserting it underneath the previous one



- 25** Repeat step 24 with the diamond's upper right-hand side point



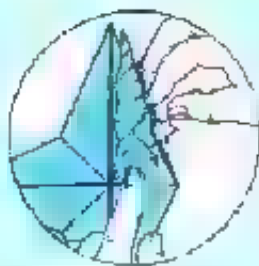
26 Finally, repeat step 24 with the diamond's upper-left-hand side point. Make sure that the points are arranged as shown.



27 Turn the model over. Pinch the right-hand point and fold it over as shown. This is a leaf.



28 Make a series of valley and mountain folds along the leaf as shown.



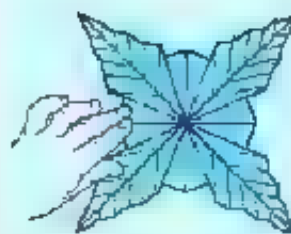
29 Open out and squash down the leaf bud being careful not to flatten completely.



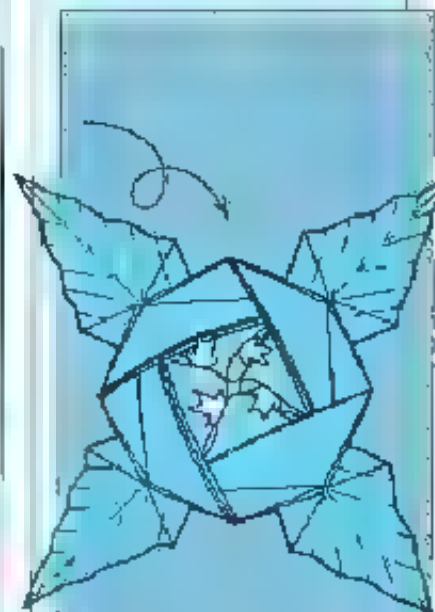
30 Repeat the folds made in step 29.



31 Without turning the model over repeat steps 27 to 30 with the top point.



32 Repeat step 27 with the left-hand point and bottom point.



33 Turn the model over. Open out its centre a little more, completing the rose branch.

SINK FLOWER

STEP BY STEP

Making this model is a very good lesson in the technique of double sinking.

USE A SQUARE OF PAPER WHATEVER SIZE



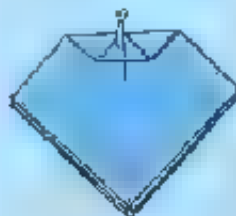
1 Begin with a preliminary fold (see page 88, steps 1 to 5). Valley fold the front flap of paper in half from bottom to top, being careful to mark only the middle point. Unfold it. Repeat with the



2 Valley fold the top point down to where the fold-lines intersect.



3 Valley fold the point back up to meet the middle of the top edge.



4 This should be the result. Press the point flat and unfold it.



5 Double sink the top point. This is what you do.



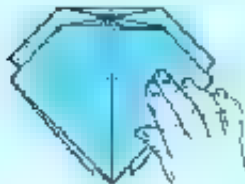
6 Repeat step 5 on the other side, creating a crease along the fold-line made in step 4.



7 Pinch the inner square at opposite corners, working toward the middle.



8 Make the middle point rise up along the fold lines made in step 7. Finally



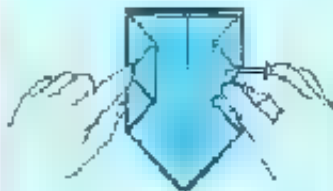
9 collapse the paper into the position shown



10 Valley fold the side points over so where the fold lines intersect. Repeat behind



11 Valley fold the side points back out to reset the middle of their adjacent sides. Repeat behind



12 This should be the result. Press the side points flat. Jut out the right-hand side point.



13 Double reverse fold the right-hand side point. This is what you do using the fold line made in step 10 as a guide. Inside reverse fold the point into the middle



14 Using the fold line made in step 1 as a guide, reset the point back out



15 Unfold the left-hand side point



16 Repeat steps 13 and 14 with the left-hand side point. Turn the model over. Repeat steps 13 to 16



17 Valley fold the top points down to meet the vertical fold-line. Repeat behind.



18 Valley fold the top points back out to meet the middle of their adjacent sloping edges. Repeat behind.



19 This should be the result. Press the points in and smooth them.



20 Along the fold-lines made in steps 17 and 18, double sink the four top points.



21 This shows step 20 taking place.



22 This should be the result. Open out the model from the inside thereby.



23 making the four flaps rise up



24 Turn the model over.



25 Carefully press the model flat as shown.



26 Turn the model over, valley fold the four middle points out.



27 Valley fold the middle points (as shown). Press them flat and unfold them.



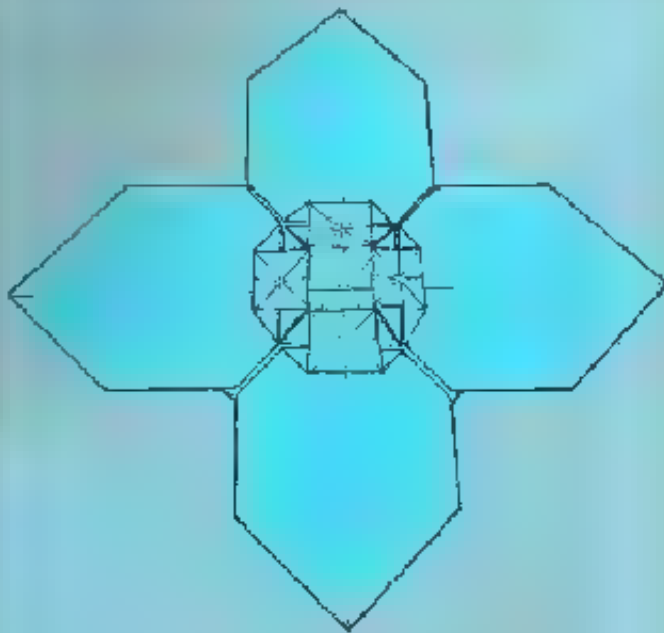
28 Along the fold-lines made in step 27, sink each middle point.



29 Turn the model over, valley fold the four middle points out.



30 Turn the model over, valley fold the four middle points out.



31 Turn the model over, valley fold the four middle points out.

PIERROT

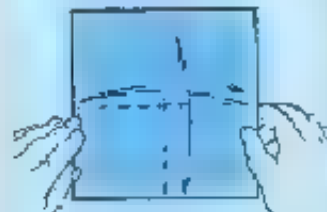
SEI NISHIKAWA

This is one of the most complicated pieces of origami in this book, so take your time and make your folds carefully

紙のサイズは、A4の紙を縦向きに切って、縦長の長方形にします。



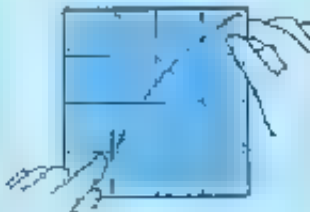
The Face



1 Place one square of paper coloured side up and valley fold the opposite sides and top and bottom edges together in turn to mark the vertical and horizontal fold-lines, then open up again



2 Valley fold the opposite sides and top and bottom edges to the middle in turn to mark the quarter fold-lines, then open up again



3 Valley fold the top-right-hand corner over to where the lower left-hand quarter fold-line intersects



4 Turn the paper around, into the position shown. Along the existing fold-lines, lift up



5 Open out and squeeze the left-hand side of the top flap down



6 With the paper in the same position, repeat steps 4 and 5 with the right-hand side of the top flap, thereby making a flap of paper appear in the centre of the model



7 Valley fold the flap in half from bottom left to top right. Press it flat and unfold it



8 This shows step 7 taking place



9 Valley fold the flap in half from bottom right to top left, as shown



10 Fold it towards the right, making the vertical valley fold as shown, at the same time



11 pushing the bottom left-hand edge up along the valley fold-line made in step 7. Press the paper flat into a small triangular flap that points towards the right



12 Open out and squash the triangular flap down neatly into the upside-down preliminary fold. This is the start of the pencil's nose



13 valley fold the nose (nose flap of paper) in half from top to bottom. Press it flat and unfold it



14 valley fold the nose's bottom point up to meet the top flap made in step 13. Press it flat and unfold it, thereby preparing the paper for sink



15 Along the fold-lines made in step 14



16 sink (see page 15, steps 1 to 5) the nose's bottom point



17 This step looks more tricky than it is. Insert your index finger underneath the left-hand sloping layer of paper and open it up along the horizontal valley fold-line as shown, at the same time



18 Pushing the lower left-hand edge up to lie along the right-hand sloping layer of paper. Press the paper flat



19 Press aside and open the right-hand layer of paper out



20 Press the layer apart and press them flat into the position shown



21 Open out and squash the bottom triangular point down neatly



22 Into an upside-down preliminary fold.



23 Press fold the preliminary fold flat as of before see page 24, slightly



24 Press inside the petal fold and pull out the nose



25 On the petal fold make the valley fold as shown, thereby opening it out, at the same time



26 Lifting up the central fold (bottom point) as shown. Press the paper flat.



27 This should be the result: valley fold (what was originally the petal) folds bottom point down along the nose's horizontal fold-line. This is the start of the person's mouth.



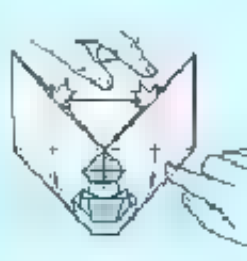
28 valley fold the sides of the main down as shown, thereby creating two small triangles on either side.



29 valley fold the mouth nose on a line between the tops of the two triangles. You will have to adjust the position of the triangles slightly so this fold can be made.



30 Slide the paper a bit with a mousetrap fold.



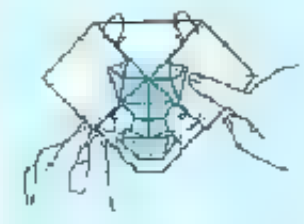
31 Open up and square the top triangular points down nearly all the sideways on preliminary folds.



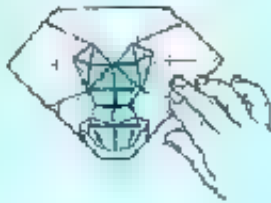
32 valley fold the top and bottom triangles into the middle. Press them flat and adjust them.



33 valley fold the front flap of each preliminary fold one at a time, thereby suggesting the eyes. You can make the person look happy or sad by changing the angle of these folds.



34 Adjust slightly the top and bottom points of each preliminary fold.



35 behind or a turn



36 Shape the sides of the nose with mountain fold.



37 Push and pinch the bottom of the nose in at the same time



38 shaping the top of the nose with a mountain fold, making it become three-dimensional

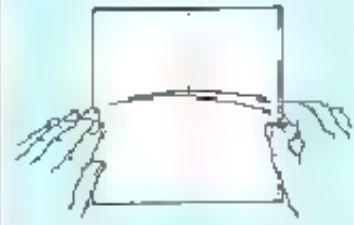


39 Sign fold the forehead as shown thereby making the face become curved



40 On one side of the forehead, make a mountain fold on a line between the side point and the middle of the top of the head. Repeat on the other side. These final mountain folds will hold the folds made in step 39 in place, thereby completing the pirate's face

Frill and Hair



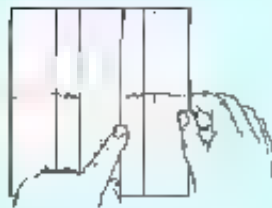
41 Place the remaining square white side up and valley fold it in half from side to side. Press flat and unfold



42 Valley fold the sides over to meet the middle fold line. Press them flat and unfold them



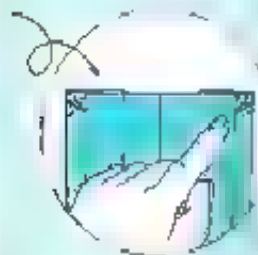
43 valley fold the sides over as shown. Press them flat and unfold them



44 valley fold the left-hand side over to meet the left-hand fold-line made in step 43, thereby making a pane of paper. Repeat with the right-hand side



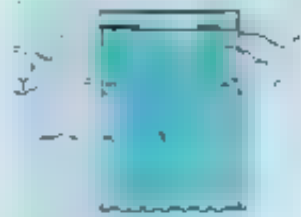
45 valley fold the panes in half from side to side. Press them flat and unfold them



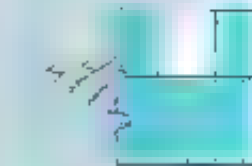
46 turn the paper over. Fold the top corners down to meet the top fold-lines. Press them flat and unfold them



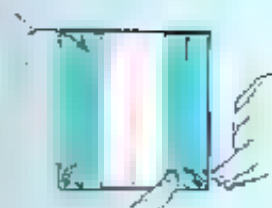
47 turn the paper over. Fold the bottom corners down to meet the bottom fold-lines. Press them flat and unfold them



48 turn the paper over. Fold the top corners down to meet the top fold-lines. Press them flat and unfold them



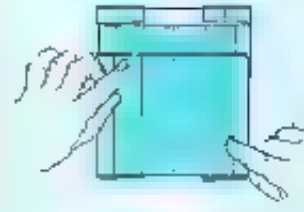
49 This should be the result



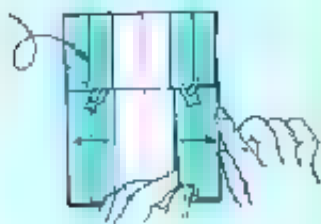
50 turn the paper over. Fold the bottom corners down to meet the bottom fold-lines. Press them flat and unfold them



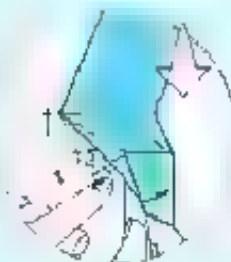
51 valley fold the front flap on paper down at the top of the fold-lines made in step 46 thereby



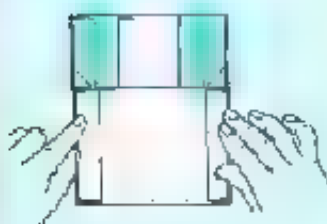
52 making a pleat in the paper



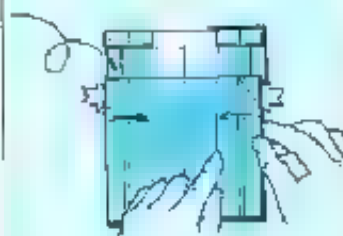
53 Turn the paper over. Valley fold the lower right-hand panel in half from side to side at the same time.



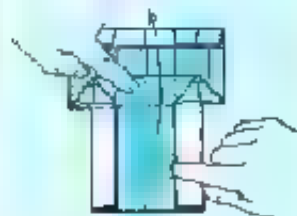
54 Pull the corrugated paper out from underneath the piece.



55 Return the paper to the same position, repeat steps 53 and 54 with the lower left-hand panel. This should be the result.



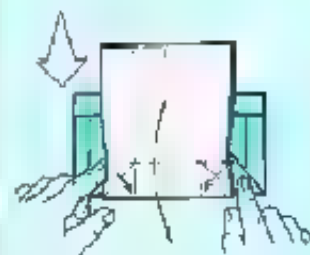
56 Turn the paper over. Valley fold the sides over to meet their adjacent fold-lines, at the same time squashing down the pleat really into the position shown in step 57.



57 Valley fold the bottom edge up along the line of the horizontal edges behind.



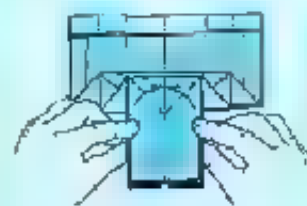
58 Valley fold the right- and left-hand sides of the top flap over to meet along the bottom edge, only pressing down on the fold where marked by the lines or dashes.



59 Valley fold the top flap's end as in.



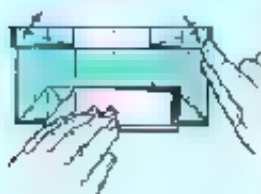
60 and down as shown, thereby making a rectangular flap of paper.



61 Push together the two sides of the rectangular flap and.



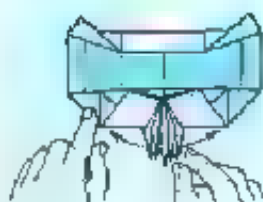
62 lay it down, so that it points to the right, thereby performing an origami technique known as a rabbit's ear



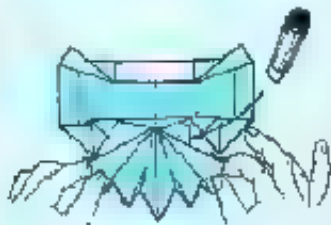
63 valley fold the top flap's corners as shown.



64 valley fold the bottom corners up to meet the top of the pleat as shown



65 Open the rectangular flap out and



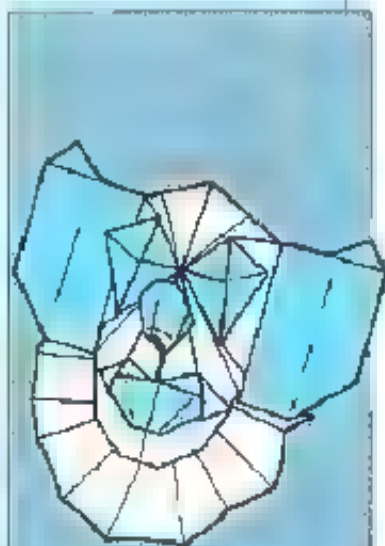
66 glue each end onto the pleat as shown, hereby making the frill



67 Turn the model over. Bring the frill around to the front



68 Insert the pencil's face underneath the pleat as shown.

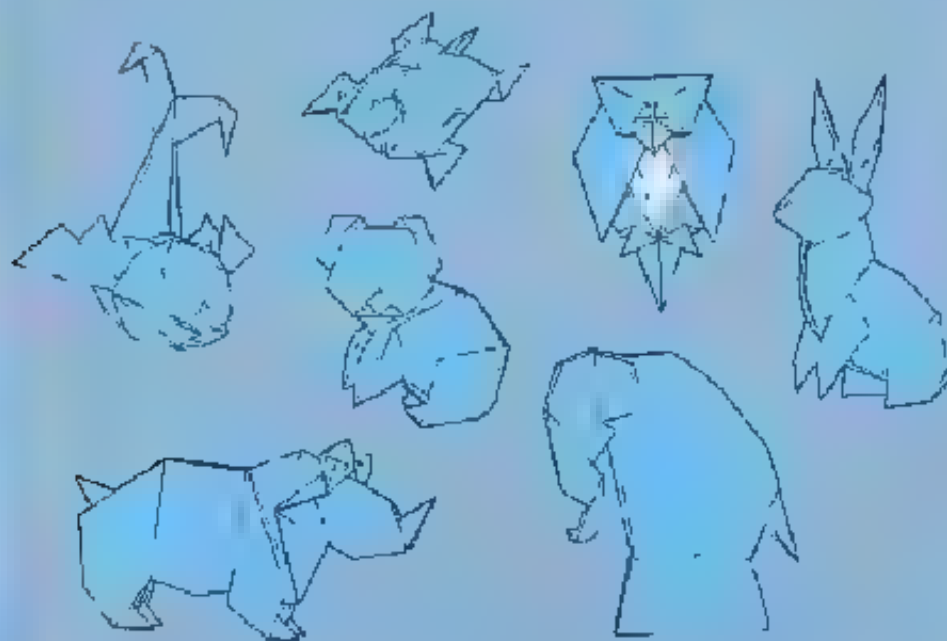


69 Here is the completed ramon

DELIGHTFUL ANIMALS

Animals make for some of the most challenging subjects to create in the world of origami. However, once the basic shape of an animal is accomplished, slight variations can be introduced to change the angle on the head, the legs, and tail.

When making your own animal model, study the number of steps that the various original bases have, and the positions of the creases within each base. Pick out the base that you feel is most suitable as your creator. Alternatively, like many general-day paper artists, you could try developing new folding bases and techniques to make animal models that look so like the real thing.



—TURTLE—

(TRADITIONAL)
INTRODUCED BY
TAKENAO HANDA

This model is very popular among Japanese children, but it is comparatively unknown in the West.

Begin by starting with



1 Begin with a water bomb base (see page 26, steps 3 to 6). Valley fold the bottom points over to meet the middle of the bottom edge. Press them flat and unfold them.



2 Valley fold the top layer of paper in half from bottom to top, thereby making



3 the bottom points rise up, bring the edges of each point up.



4 the vertical middle line is a fold similar to a petal fold.



5 Turn the inner open walls to the bottom points over to meet the middle of the bottom edge. Press them flat and unfold them. Repeat steps 2 to 4.



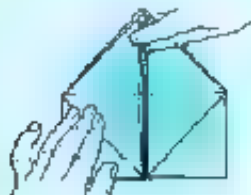
6 Valley fold the top point down into the middle.



7 Open out the right-hand layer of paper and square it.



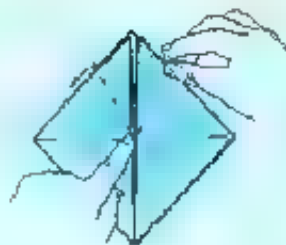
7 Lower neck. In a triangle Repeat steps 7 and 8 with the left-hand layer of paper.



8 This should be the result



10 Turn the model over. Repeat steps 6 to 9



11 Valley fold the top points out



12 from the middle as shown. These are the turtle's legs. Repeat steps 11 and 12 behind.



13 From the bottom point valley fold the right-hand sloping edge over to be across the vertical middle line. Repeat behind.



14 Inside reverse fold the bottom right-hand point.



15 Inside reverse fold the right-hand point's tip, to make the tail



16 valley fold the left-hand sloping edge over as shown. Repeat behind.



17 Inside covering fold the bottom left-hand point, thereby



18 making the turtle's neck.



19 Pick up the model and hold it in either hand, as shown. Gently pull the legs apart, at the same time



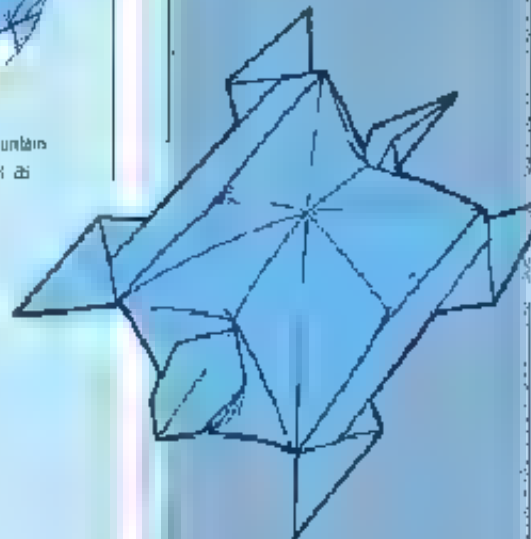
20 the ends of the spread are thereby making the turtle become three-dimensional.



21 Make the valley and mountain to be on either side of the neck as shown, thereby



22 making the turtle's head



23 Here is the completed turtle

SYACHI HOKO

KAZUO CHOSHI

Kazuo Choshi's original occupation was coal mining. However, after an accident left him disabled, he developed his interest in origami, and is now teaching paperfolding as an aid to rehabilitation. Most of Kazuo Choshi's models are linked in some way to his home city of Nagoya, Japan. This model is a perfect example. It represents a golden dolphin-like fish that can be found on the roof of Nagoya castle.

FIG. 4. STEP 7. FOLD THE TOP



1 Begin with a birdhouse-size page. 24 to 125, steps 1 to 8). Turn the base around so that its flaps point to the right. Valley fold the front flap over towards the left as shown. Repeat behind.



2 Valley fold the front flap out on a slant. Repeat out and



3 Valley fold the top point down to the bottom as



4 through turning the page of a book.



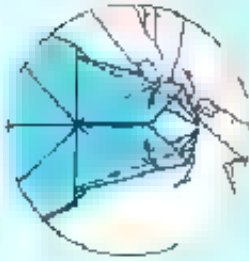
5 Turn the model over from top to bottom. Repeat steps 1 and 2.



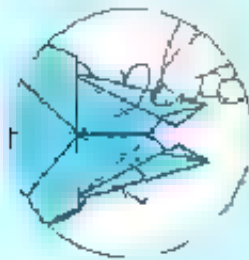
6 Turn the model over. The right hand points are the left's front fins.



7 Mountain fold the fins as shown.



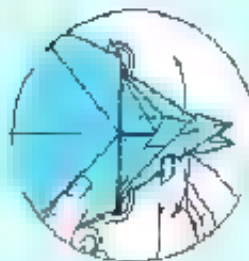
8 Valley fold the flaps as shown, at the same time letting the fold made in step 7 come around to the front.



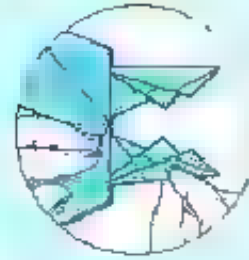
9 Mountain fold each flap behind along the line of its adjacent, underneath flapping edge.



10 Joy fold the flaps as shown, at the same time letting them come around to the front.



11 Gently swing the fins apart, thereby releasing air.



12 Now make adjoining layers of paper. Press them flat.



13 Join the model over. Valley fold the fins over each other the left as shown.



14 Shape the fish's gills with valley and mountain folds.



15 Mountain fold the model in half from top to bottom.



16 Treating the left-hand points as if they were one, make reverse fold, then downwards.



17 Valley fold the left-hand side point over as shown. Repeat behind.



18 Again, treating the points as if they were one, inside reverse fold them upwards, at the same time stretching the fold. Inside in step 7 and making the model become three-dimensional.



19 Once again, treating the points as if they were one, inside reverse fold them towards the left.



20 Inside reverse fold the inner point out towards the right, thereby making a wide fin.



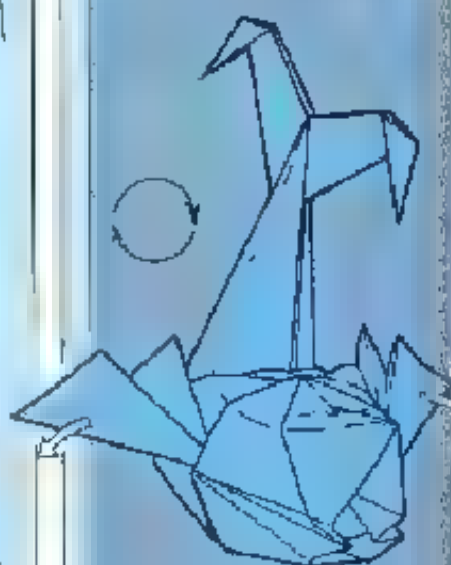
21 Shape the top of the fin with outside reverse folds.



22 Shape the left side with outside reverse folds. Repeat behind round out the mouth.



23 Indent the head and tail slightly.



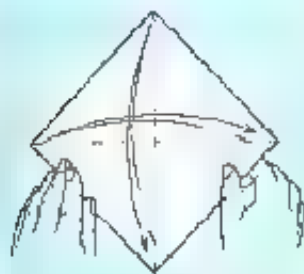
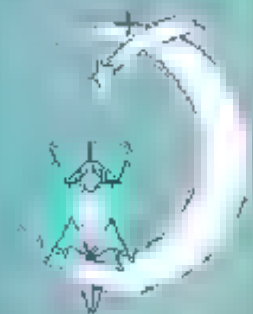
24 Open out the fin by creasing the 5-point end.

OWL

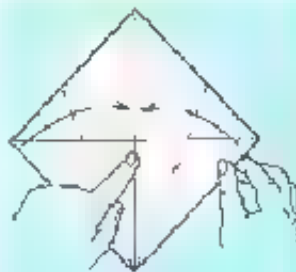
KEN, VNB

Try changing the angle of the eyes each time you make this model to see how many different expressions you can give your owl.

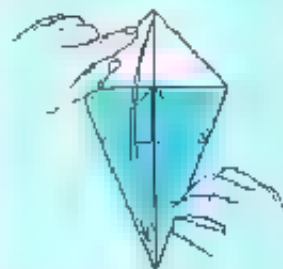
1. Turn paper to white side



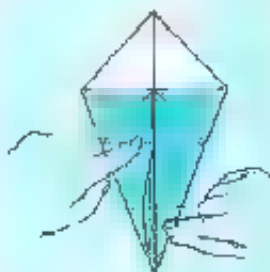
1 Turn the square around so that like a diamond. Valley fold the opposite corners together in turn to mark the diagonal fold-lines, then open up again.



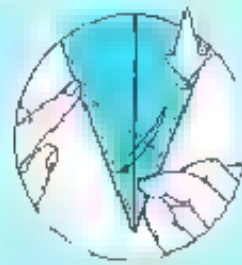
2 From the bottom corner valley fold the bottom sloping edges over to meet the middle fold-line, thereby making the kite base.



3 Valley fold the kite base in half from bottom to top. Press it flat and unfold it.



4 Valley fold the bottom point up to meet the fold-line made in step 3. Press flat and unfold it.



5 Valley fold the bottom up, hand shaping side as to meet the fold-line made in step 4. Press it flat and unfold it.



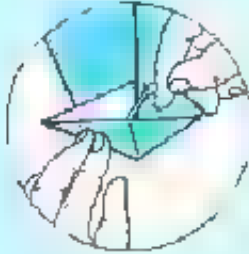
6 Open out the top left-hand layer of paper.



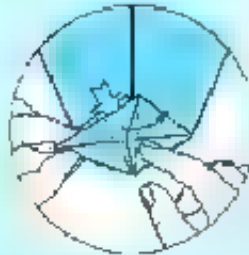
7 At the same time swinging the bottom point over towards the right.



8 valley fold the paper, fold upwards the left along the vertical middle line, at the same time



9 pulling the paper towards itself into a sort of paper fold. Press it flat. Pull the inside layer of paper



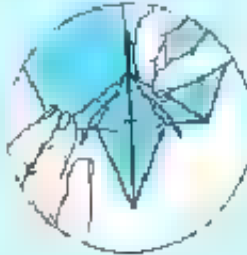
10 outward press a down flaps, thereby making a triangular fan. Open out the top and squish down flat



11 Pinch fold the squashed flap (see page 124, steps 1 to 6), thereby making the tail



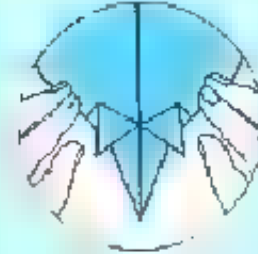
12 Attention to the bottom point (which is to be found underneath the tail) pull into along the adjacent next line



13 valley fold the two middle points out, thereby making the rows



14 Mountain fold behind a little on each side point



15 This should be the result.



16 On the top left-hand layer of paper make a valley and mountain folds as shown, thereby opening it out at the same time



17 taking the left-hand sloping edge over to the right. Press it down neatly.



18 valley fold the top layer of paper over to the left along the middle fold line thereby opening it out.



19 Repeat step 18 on the top right-hand layer of paper at the same time.



20 taking the right-hand sloping edge over to the left. Press it down neatly thereby making a triangular flap.



21 valley fold the flap in half from top to bottom. Press it flat and unfold it.



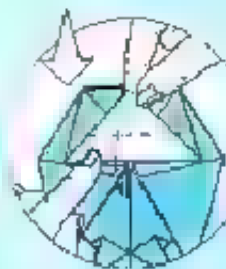
22 On the flap's top layer of paper, make the valley and mountain folds as shown, thereby opening it out.



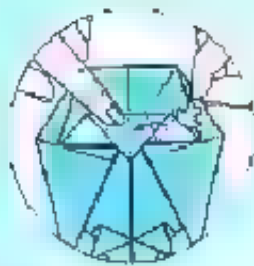
23 Repeat step 22 on the flap's bottom layer of paper at the same time flattening the flap down towards you.



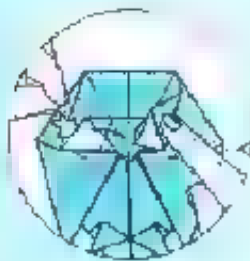
24 valley fold the flap's bottom point up on a line between the two side points, thereby making a white triangle.



25 valley fold the triangle's top corner as shown, thereby making the face.



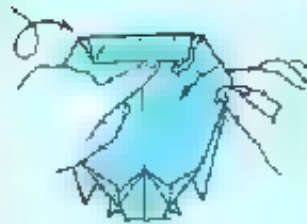
26 Open and squash the face's bottom right-hand corner as shown and



27 press it down neatly into this position. Repeat steps 26 and 27 with the new bottom left-hand corner



28 Mountain fold the cap edge behind.



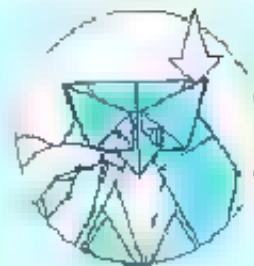
29 Turn the model over. Valley fold the outer right-hand side over as shown, at the same time rearranging the adjacent layer of paper slightly



30 With the paper in the same position, repeat step 29 with the outer left-hand side



31 Turn the model over. Valley fold the inner edges over as shown



32 Valley fold the face's middle points over a little, the rest suggesting the eyes



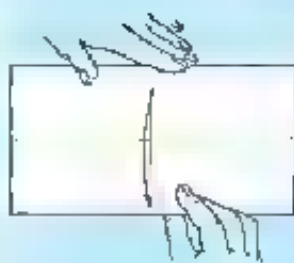
33 Here is the completed owl

RABBIT

YOSHIN DE
MOMOTAN,

This model is a perfect example of how you can use a few rocks to create a simple model that suggests the whole form.

DETERMINED BY ROCKS INSTRUCTIONS
APPROX. 10 MIN.



- 1 Place the rectangle sideways in valley fold in half from bottom to top. Press it flat and unfold it.



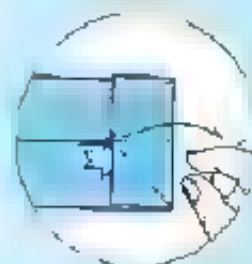
- 2 Valley fold the top and bottom edges over to meet the middle fold-line.



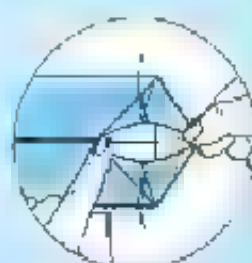
- 3 Valley fold the top and bottom right-hand corners over to meet the middle edges. Press them flat and unfold them.



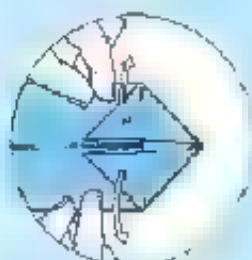
- 4 Valley fold the right-hand side over as shown, thereby raising a flap.



- 5 Open out the flap's top layer of paper and



- 6 Along the fold-lines made in Step 4, press the paper down neatly into two triangular points.



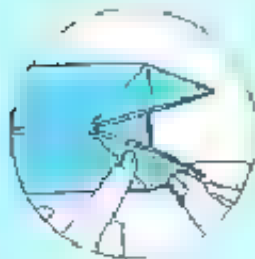
- 7 Pinch the triangular points and



8 stretch them apart, thereby



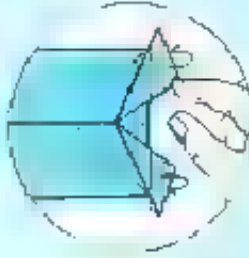
9 pulling down the adjacent side point, valley fold the top and bottom triangular points over, so



10 they point towards the right. These points will become the rabbit's front paws



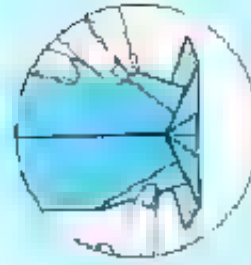
11 valley fold the right-hand and left-hand points over as shown



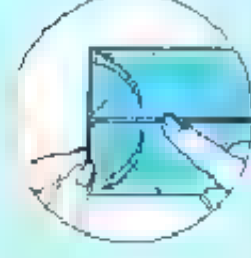
12 Mountain fold the top and bottom right-hand side points behind along the line of the adjacent folded side



13 valley fold the top and bottom right-hand points over on a side



14 if the same, the rearranging the adjacent layers of paper



15 Repeat steps 2 to 14 with the top and bottom left-hand corners making sure that in step 10 they point towards the left. These points will become the rabbit's ears



16 Mountain fold the paper in half from top to bottom



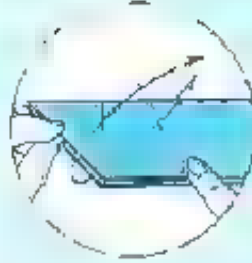
17 Inside reverse fold the middle left-hand layers of paper. The easy way to accomplish this step is to



18 take the left-hand triangular point over towards the right as though turning the page of a book, at the same time stretching and flattening down the middle layers of paper.



19 Return the triangular point to its original position.



20 valley fold the top left-hand triangular point over as shown. Repeat behind.



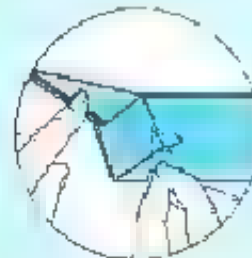
21 Pinch the left-hand point's sloping edges together with a mountain fold.



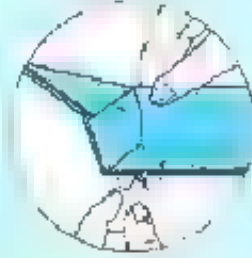
22 Flatten the point to the left with its sides still pinched together, thereby



23 performing an origami technique known as a rabbit's ear. Repeat steps 21 to 23 with the remaining left-hand point.



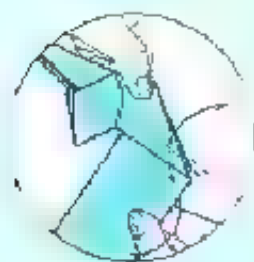
24 Shape the rabbit's chin with a mountain fold. Repeat behind.



25 Shape the rabbit's neck with a mountain fold. Repeat behind.



26 Inside reverse fold the right-hand corner of paper downwards



27 Inside reverse fold the section of paper up towards the right, at the same time taking in a little of the rabbit's neck section of paper



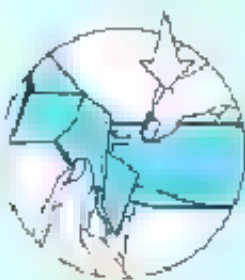
28 Shape the rabbit's ears with a mountain fold. Repeat behind



29 This should be the result



30 Outside reverse fold the right-hand section of paper at the same time



31 Inserting the front jaws underneath the neck as shown



32 Inside reverse fold the top right-hand corner



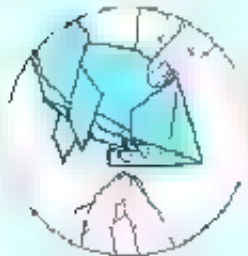
33 Step fold the top right-hand layer of paper, at the same time



34 Stretching the top edge down as shown. Press the paper flat



35 Repeat steps 33 and 34. Inward folds are the rabbit's back paws.



36 The rear flaps of each back paw should be refolded inside, thereby working the bunny and paws together.



37 Shape the rabbit's tail with a double reverse fold.



38 This should be the result.



39 Indent the ears and nose slightly, thereby



40 covering them out.



41 Open out the rabbit from underneath, at the same time shaping its back.



42 Here is the completed rabbit.

CIRCUS ELEPHANT

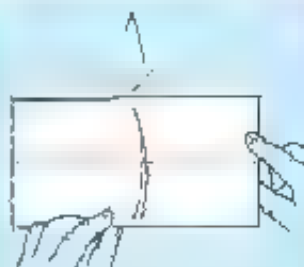
MEGUM BODLE

Do not be discouraged by the tricky sink folds in steps 18, 19 and 20 of this model, as everything falls into place very easily

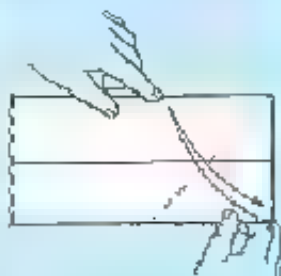
US: 11 1/2" x 11 1/2" (29.5 x 29.5 cm)
UK: 11 1/2" x 11 1/2" (29.5 x 29.5 cm)



1 Place the rectangle sideways on. Valley fold it in half from bottom to top. Press it flat and unfold it. Cut along the middle foldline, thereby making two rectangles.



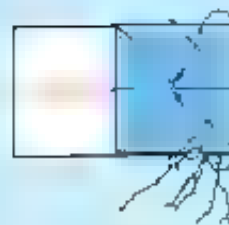
2 Place one rectangle sideways on, with the white side on top. Valley fold it in half from bottom to top. Press it flat and unfold it.



3 Valley fold the right-hand side up to meet the top edge. Press it flat and unfold it.



4 Valley fold the right-hand side over at slant, thereby making a flap.



5 Fold reverse fold the top and bottom right-hand corners.



6 Valley fold the right-hand side point over to the intersection of the diagonal and horizontal fold-lines.



7 Fold the flap of paper over to the right so that



8 The reversed corners rise up. Squeeze them down flat into



9 In this position, valley fold the top and bottom right-hand corners over to meet the middle fold-line.



10 Valley fold the left-hand top edge down to the right to lie along the adjacent vertical edges. Press it flat and unfold it.



11 Valley fold the left-hand bottom edge up to the right to lie along the adjacent vertical edges.



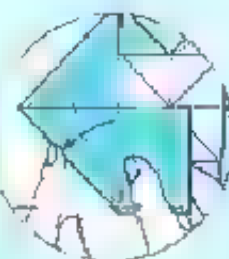
12 Valley fold the left-hand layer of paper down along the middle fold-line, at the same time folding the left-hand side over to lie along the adjacent vertical edges, thereby letting the paper arrange itself in a sort of paper fold (see page 124).



13 Valley fold the left-hand section of paper over to lie along the middle fold-line.



14 Valley fold the rectangular section of paper over as shown. Press it flat and unfold it.



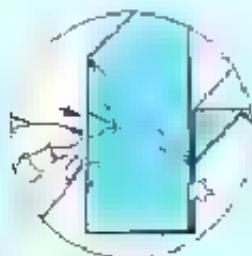
15 Valley fold the rectangular section of paper over, so that the fold-line made in step 14 lies along the adjacent sloping edge.



16 Open out and squish down neatly the section of paper's upper point.



17 Push the upper prism flat. Unfold the paper back to the beginning of step 3.



18 Open out the section of paper at the top. Push the rectangle area forward as shown by the mountain fold-lines.



19 Following the existing fold-lines on either side, flatten down.



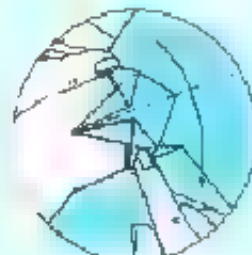
20 The section of paper valley fold the main body of paper in half from top to bottom.



21 Shape the elephant's tail with a double reverse fold, taking two layers of paper to the front and one to the back.



22 Working from the top, narrow down the tail by mountain folding its edges up inside the model. Press the paper flat (see step 23).



23 This is a view of the tail from inside the model. Make the 'collar' at the base of the tail.



24 Round off the elephant's back with a small cone.



25 Shape the elephant's legs with a step fold. Repeat behind.



26 Inside reverse fold the top right hand point down as shown, thereby making the trunk



27 Valley fold the trunk's top layer in half at the same time opening the upper hand of paper out and squashing it down towards the elephant's back, thereby making an ear. Repeat behind



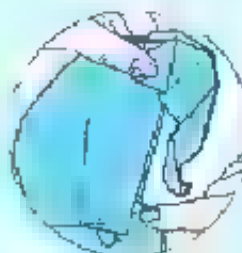
28 Outside's reverse fold the trunk



29 Again outside reverse fold the trunk



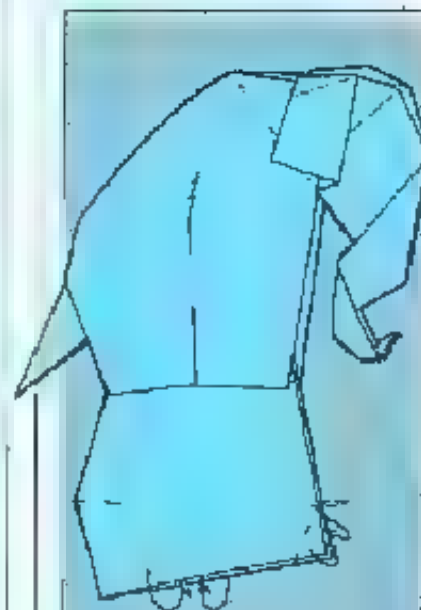
30 Inside reverse fold the trunk's tip. Shape the ear with a step fold. Repeat behind



31 Shape the trunk too with a mountain fold. Repeat behind



32 Mountain fold the right-hand side of the elephant's platform into the middle. Repeat behind



33 Shape the platform by mountain folding in bottom edges and right-hand corner up inside the middle, thereby completing the circus elephant

KOALA

YOSHIH DE
MOMOTAN

Try to find the best color and texture of paper for this model, as it will enhance the finished item and make it look more realistic.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



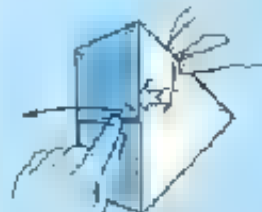
1 Turn the square around to look like a diamond. Valley fold from bottom to top. Press it flat and unfold it.



2 From the left-hand corner valley fold the left-hand corner over to meet the middle fold line, thereby making the kite base.



3 Momentarily hold the kite base in both hands, left and right.



4 Put the upper corner over

5 to the left, so its top edge comes to rest along the middle crease. Press the paper flat to make a triangular point. Repeat steps 4 and 5 with the bottom corner, thereby



6 making a shape that in origami is called the fish base. Valley fold the rightmost right-hand point over to the left on a line between the top and bottom points, thereby making a fish base in its 'pointed' form.



7 Valley fold the left-hand side point over as shown. Press it flat and unfold it.



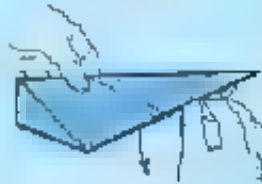
8 Open up the fish base with the white side on top. Valley fold the left hand side point over along the fold-line made in step 7, at the same time



9 returning the left hand along the existing fold-line as shown



10 Mountain fold the top behind to the bottom



11 Inside reverse fold the right hand point downwards



12 Valley fold the reversed point's top layer or paper over the left



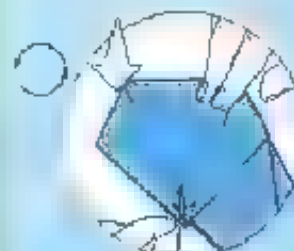
13 Open out the reversed point, at the same time



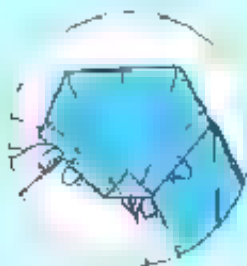
14 Bring the bottom point upwards, thereby making the kokoro face and head



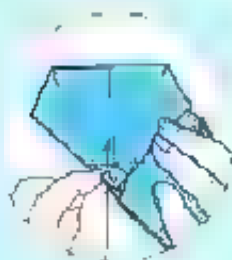
15 Press the paper flat into its position



16 Turn the model around, then the pattern shown. Valley fold the wide bottom point up, thereby making a small wide triangle. This is the whale's nose



17 Mountain fold the faces lower, slipping edges behind as shown, thereby making the nose become diamond-like in shape.



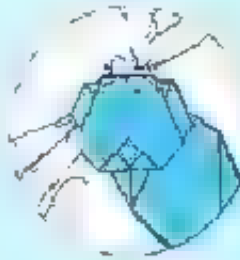
18 Valley fold the top edge along a horizontal line that runs adjacent to the top point.



19 Valley fold the nose in half to top in the point. At the same time, let the paper from underneath flick up.



20 Shape the ears with step folds as shown.



21 Shape the head with a mountain fold between the eye and the same time.



22 Taking in a side of the paper, the form creases as shown. Valley fold the triangular flaps to the back. Repeat behind.



23 Valley fold the triangular pointed flap over across its upper edge. Repeat behind. These are the frog's front paws.



24 Inside reverse fold the middle right-hand side of paper, thereby making two flaps of paper.



25 Valley fold the left-hand side of paper over. Repeat behind. These are the back paws.



26 Valley fold the front paw's short sloping edge over to lie along the adjacent fold-line. Repeat behind.



27 Valley fold the front paw over along the adjacent fold-line. Repeat behind.



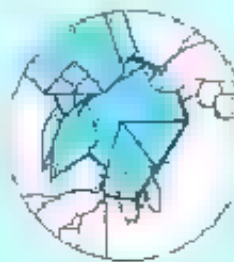
28 Open up the front paw slightly, thereby making the valley fold as shown. Repeat behind.



29 Valley fold the front paw up, underneath the face, at the same time letting it swing around into the position shown in step 30. Repeat behind.



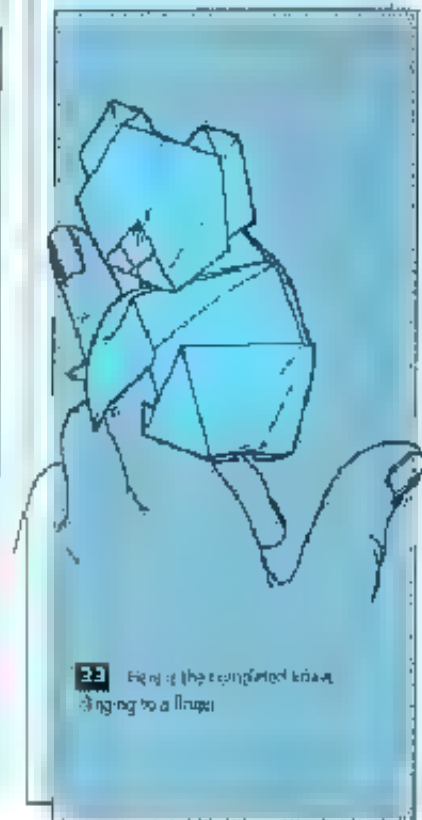
30 Shape the back with a mountain fold, thereby locking the front paw into place. Repeat behind.



31 Shape the back paw with a mountain fold. Repeat behind.



32 Make the model become three-dimensional by opening out its inside edge of paper.



33 Here is the completed knife, hanging to a finger.

RHINOCEROS

EDWIN CORRIE

This model is one of many that Edwin Corrie has created from an A-sized rectangle of paper. With this piece of origami, try to make your folds as neat, tidy and accurate as possible.

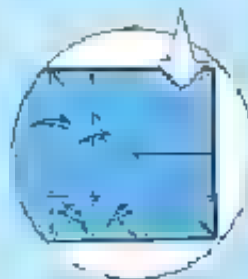
When finished, keep the model in a cool, dry place.



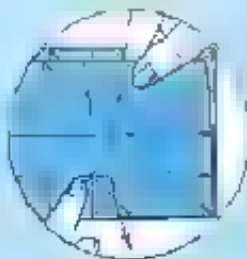
- 1 Place the rectangle sideways on. Valley fold it in half from bottom to top.



- 2 Valley fold the paper as shown. Press the folds flat and unfold them.



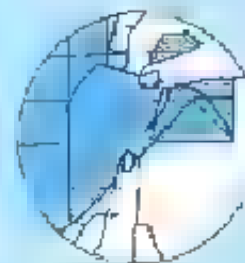
- 3 Again, valley fold the paper as shown. Press the folds flat and unfold them.



- 4 Valley fold the top layer of paper down along the lower horizontal fold-line made in step 2.



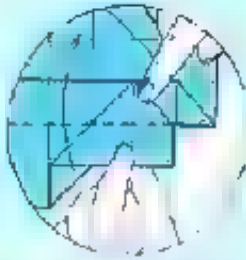
- 5 Valley fold the bottom edge up along the diagonal fold-line made in step 2, making



- 6 the adjacent side rise up. Flatten the side down, thereby making a band of paper.



- 7 Open out the band of paper and squash it down neatly into the position shown in step 2.



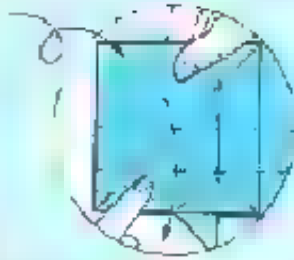
8 Valley fold the bottom edge up along the adjacent horizontal fold-line.



9 Open out the top layer of paper and squash it down neatly into the position shown in step 10, thereby



10 making an ear



11 Turn the paper over from right to left. Repeat Steps 4 to 10.



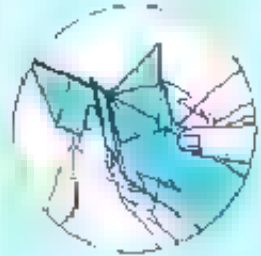
12 This should be the result



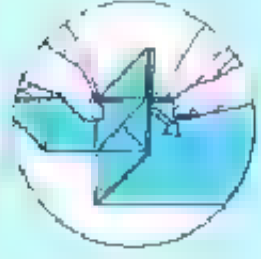
13 Turn the paper over from bottom to top. Open out the paper slightly and, along the existing fold-lines, flatten the middle folded ridge of paper out.



14 Push the middle ridge of paper down, as shown by the valley fold-lines.



15 On an outside, step, fold the paper there by flattening it down neatly into the position shown in step 16.



16 Fold the paper where shown and carefully separate the ears apart from the main body of paper.



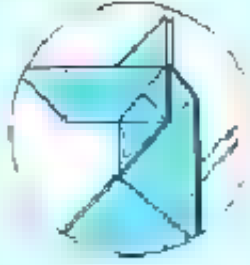
17 Double reverse fold



18 Carefully pull out one edge of paper on each side



19 Valley fold the front layer in half front side in side. Repeat on other



20 Double inside reverse fold. The model will need to be opened but for this step to take place



21 Valley fold the front layer over



22 Pin the middle layer in



23 Curl it but a square it down symmetrically



24 This should be the result. Valley fold the layers in



25 Repeat the front legs symmetrically with step 10-15



26 Shape the front leg with a valley fold. Repeat behind.



27 Shape the horn with a mountain fold. Repeat behind.



28 Double reverse fold the horn.



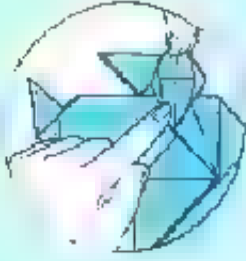
29 Valley fold the side of the head towards the horn.



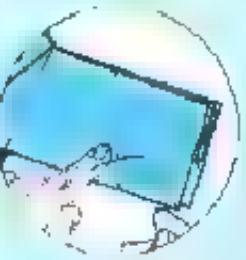
30 Open out one ear and squash it down neatly.



31 Pinch and lift up the ear's front flap of paper, thereby.



32 Tucking the paper around the head in a sort of petal fold (see page 240). Repeat steps 26 to 32 with the remaining ear.



33 Spread the top right-hand layer of paper at the same time.



34 Press the top edge down as shown. Press the paper flat. Repeat steps 32 and 34, left-hand.



35 Double reverse fold the top right hand point, thereby making the tail



36 Shape the tail by repeating steps 22 and 23 of the circus elephant on page 158



37 Shape the back leg with a mountain fold. Repeat behind



38 Shape the abdomen with a mountain fold. The legs are square holes on the inside. Repeat behind



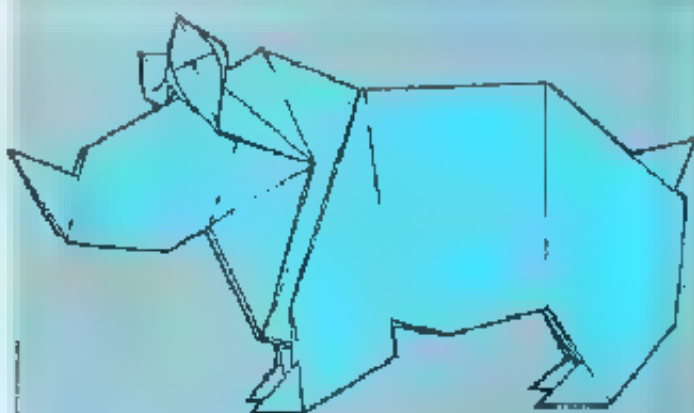
39 This is a view of the model from the underneath, showing the result of step 38



40 Shape the front leg with a double reverse fold. Repeat behind



41 This should be the result. Repeat step 40 with the back legs

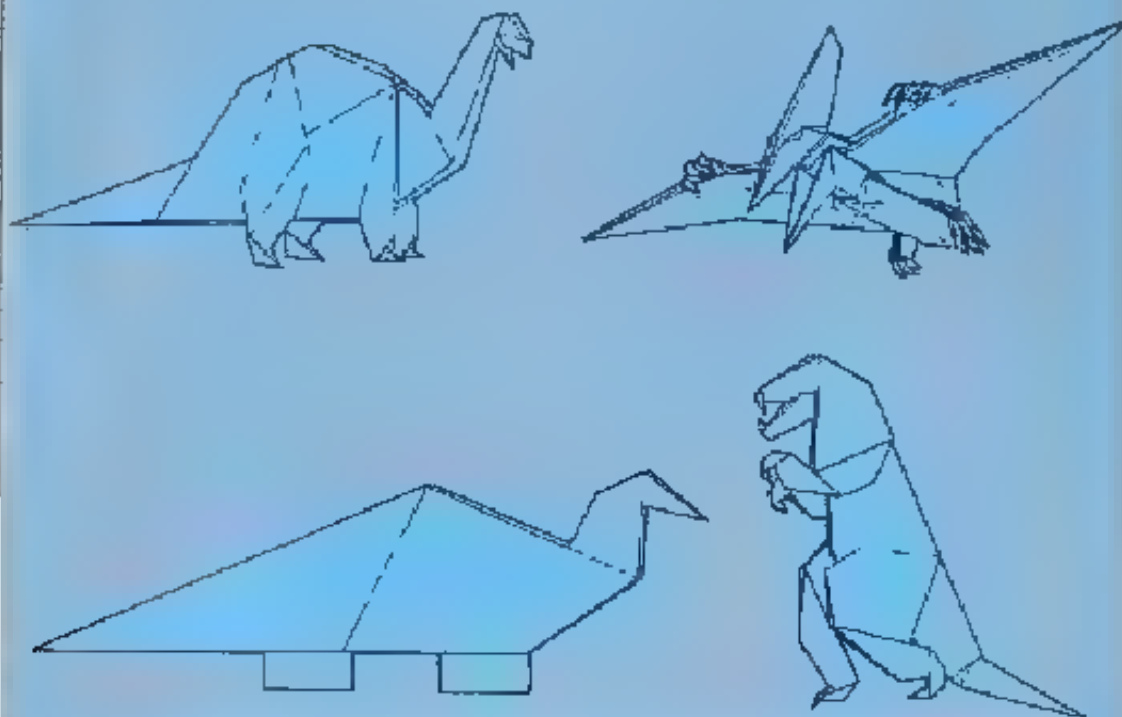


42 Elephant is now a little more

CELEBRATED EXTINCT ANIMALS

In the following pages, you will learn how to build some of the world's most distinguished extinct animals. They range from a simple dinosaur to a difficult prehistoric animal with its jaws.

Dinosaurs are among the most demanding subjects to fold in the world of origami. A few of the models may at first seem daunting at first, but they are actually very easy to fold. Remember, as with any model, fold neatly and look very carefully at each step. Let us see what you know to do.

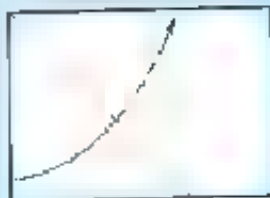
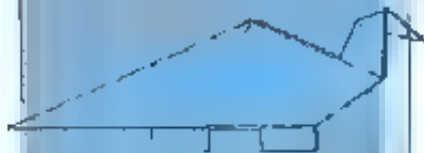


SIMPLE DINO SAUR

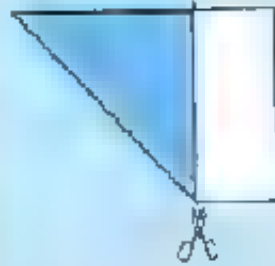
RACHEL KATZ

This is the perfect model to teach a young child

For more information on this and other projects, visit www.kidscreativity.com



1 Place the rectangle sideways on. Valley fold the left-hand side up to meet the top, thereby making a triangle.

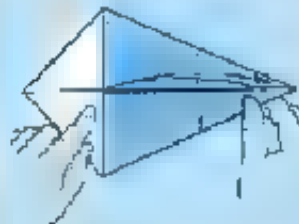


2 Cut along the side of the triangle. Saw the triangular piece of paper for the dinosaur's legs. Open out the triangle into a square.

Body



3 With the white section top, turn the square around so that the existing fold-line is running horizontally across the paper. From the right-hand corner, valley fold the top and bottom sloping edges over to meet the middle fold-line, thereby making the side base.



4 Valley fold the right-hand point over to meet the vertical edges. Press it flat and unfold it.



5 Turn the paper over. Valley fold the right-hand point over along the line made in step 4.



6 Valley fold the point back out towards the right.



7 Valley fold the paper in half from bottom to top.



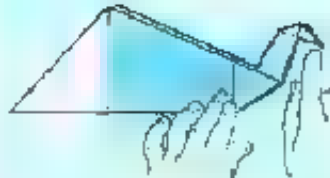
8 Reach inside the model and pull out the



9 dinosaur's neck. Press it flat into the position shown in step 10.



10 Reach inside the neck and pull out the



11 head. Press it flat into the position shown in step 11, unpleating the body.

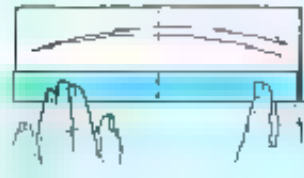
Legs



12 Place the rectangular piece of paper sideways on, with the white side on top. Valley fold it in half from bottom to top. Press the paper flat and unfold it.



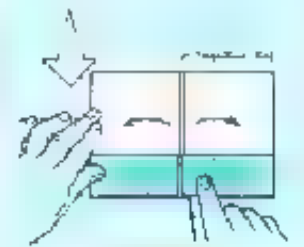
13 Valley fold the bottom edge up to meet the middle fold line.



14 Valley fold the paper in half from side to side. Press it flat and unfold it.



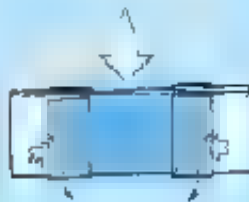
15 Turn the paper over. Valley fold the sides over to meet the middle fold line.



16 Valley fold the centre edges out to points one-third of the distance and then all across, thereby making two bands of paper.



17 Mountain fold the paper in half from bottom to top



18 Open out the top strips of paper and



19 squish them down neatly into the position shown



20 unfold the paper out. Repeat steps 17 and 18 neatly



21 completing the legs

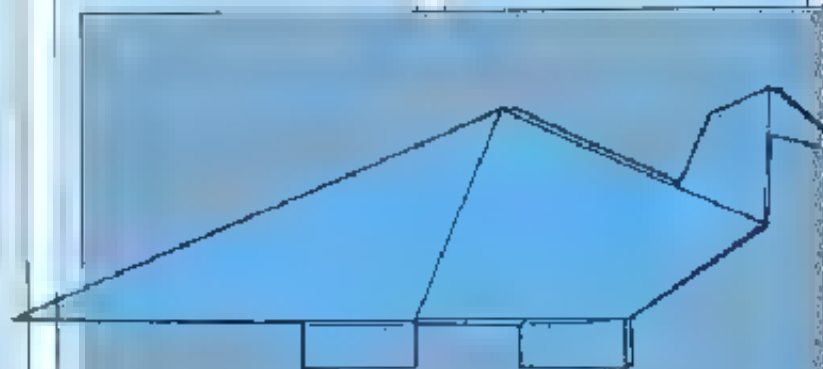
Assembly



22 Insert the top edges underneath the front and back body flaps.



23 From the left-hand point, valley fold the top sloping edge over to lie along the bottom edge. Repeat behind.



24 Here is the completed dinosaur

TYRANNOSAURUS

MEDIUM MODEL

When two different pieces of origami are joined together to make one model, the result is called compound origami. This technique is very useful for making animals, as you can fold the front half from one square and the rear half from another.

For this model, you will need two squares of paper. The smaller square should be three-quarters the length of the sides of the larger square. For example, if the large piece of paper is 30 cm (12 inches) square, the smaller piece should be 23 cm (9 inches) square.



Legs and Tail

Jaws and Arms

Make sure the sides of the smaller square are three-quarters the length of the sides of the larger square. For example, if the large piece of paper is 30 cm (12 inches) square, the smaller piece should be 23 cm (9 inches) square.

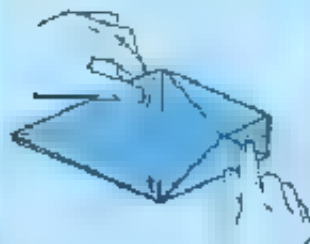
Legs and Tail



1 Fold the larger square into a bird's nest (see pages 24 to 25, steps 1 to 8). Turn the base around so that its flaps point to the right; valley fold the front flap over towards the left.



2 Valley fold the back flap's top over to meet the adjacent side.



3 Valley fold the paper in half from top to bottom.



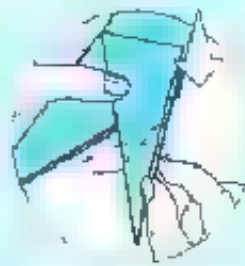
4 Valley fold the front left-hand flap across to the other side.



5 Valley fold the flap down as shown, creating a sharp point.



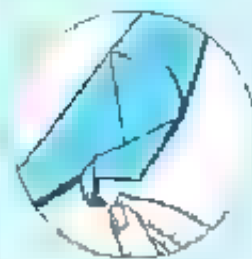
6 Fold to a leg.



7 This side reverse fold the leg.



8 Shape the thigh with an inside reverse fold. Shape the leg with outside and inside reverse folds.



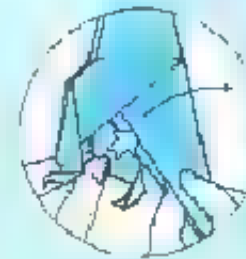
9 This should be the result.



10 Turn the model over. Always fold the right flap over as shown, thereby making another leg. Repeat steps 7 and 8.



11 Arrange the legs so that one is in front of the other.



12 Open out the middle point.



13 This is a view of the model from the inside. Valley fold the middle point's sloping sides over a little.



14 Step fold the middle point as shown.



15 Valley fold the middle point in half from left to right.



16 Pull on the middle point as is



17 as the hidden step fold will allow you, thereby making the tail.



18 Here are the completed legs and tail

Jaws and Arms



19 Fold the square again into a circle base (see page 124 to 125, steps 1 to 8) Turn the base around so that its flaps point to the right, valley fold the base in half from top to bottom



20 Turn the paper around so that its right-hand point becomes the top, make reverse fold the inner flap, thereby making the lower jaw



21 Mountain fold the jaw's top point down inside the jaw



22 inside reverse fold the outer flap, thereby making the upper jaw



23 Outside reverse fold the upper jaw's tip inside reverse fold the lower jaw's tip



24 valley fold the front bottom flap over to the right along the adjacent horizontal fold-line, thereby making an arm



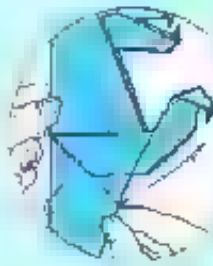
25 Outside reverse fold the arm



26 Shape the arm with an outside reverse fold



27 Shape the arm's tip with an inside reverse fold. Mountain fold the arm's bottom piece behind

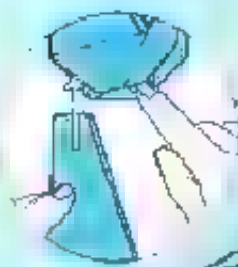


28 Repeat steps 24 to 27 behind with the remaining bottom flap.



29 To complete, arrange the arms so that one is in front of the other

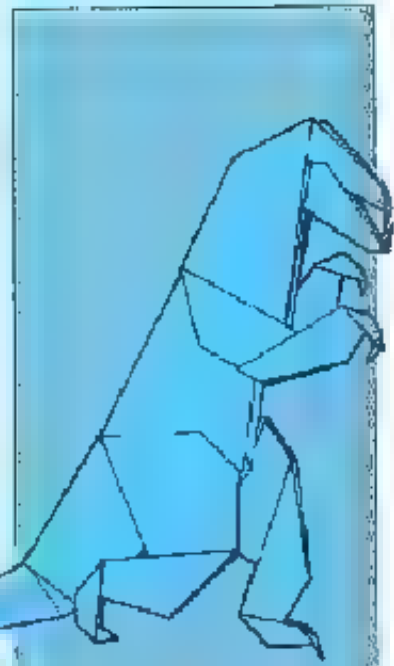
Assembly



30 Insert the legs and tail between the arms as shown



31 This is a view of the model from the inside. Note the position of the two pieces. Glue them together



32 Here is the completed dinosaur

APATOSAURUS

STEVE BIDDLE

One is not restricted to folding models from one particular base alone, as it is sometimes possible to combine two bases. This model is made from a combination of the blintz and fish bases.

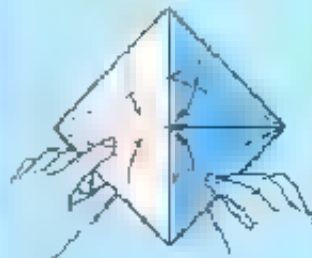
See The Quality of the Model for more info.



1 Valley fold the opposite sides and top and bottom edges together in turn to meet the vertical and horizontal fold-lines, then open up again.



2 Mountain fold the left-hand corners and valley fold the right-hand corners into the middle, thereby making a sort of blintz base.



3 Push the sides of the paper together with the valley fold. Flatten the points to the right with its sides still pinched together. Repeat this step with the top point, etc.



4 making a fish base in it's opened form (see page 60). Bring out the left-hand corners from behind the base.



5 Repeat step 3 with the left-hand corners, thereby making another 'opened' fish base.



6 Mountain fold the paper in half from bottom to top.



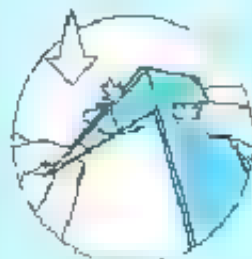
7 Finally, reverse fold the left-hand point upwards, thereby making the head.



8 Starting from the top, valley fold the top edge of the neck in half at the same time inside reverse folding the triangular area, as shown. Repeat behind.



9 Inside reverse fold the neck (thereby making the head).



10 Shape the lower jaw with a double outside reverse fold.



11 This should be the result.



12 Valley fold the left-hand triangular flap over, thereby making a front leg. Repeat behind.



13 Shape the front leg with a double reverse fold. Repeat behind.



14 This should be the result.



15 Valley fold the right-hand point over along the top edge of the adjacent triangular flap. Press it flat and unfold.



16 Valley fold the right-hand triangular flap over towards the left. Repeat behind. These are the back legs.



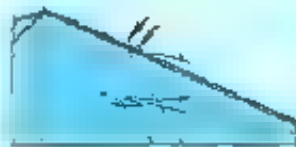
17 Valley fold the right-hand point in half from bottom to top. Press smoothly. The paper will form a 'Z' shape. In the standing fold-line made in step 15, then unfold it.



18 Along the fold-line made in step 17, top to the right-hand point.



19 Press the step fold flat, and then unfold it.



20 Along the existing fold-lines, double reverse fold the right-hand point. The model.



21 We need to be opened out for this step to take place.



22 Flatten the paper down neatly, into the position shown in step 23.



23 Mountain fold the right-hand point & turn over the paper up inside the model. Repeat behind.



24 Sink the right-hand point's middle section of paper. The model.



25 We need to be opened out for this step to take place.



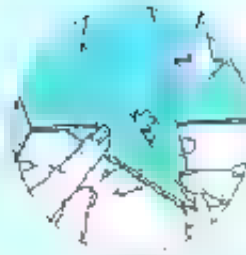
26 Flatten the paper down neatly into the position shown in step 25.



27 Valley fold the back leg over towards the right side, as shown.



28 Shape the thigh with a mountain fold. Repeat with the other leg.



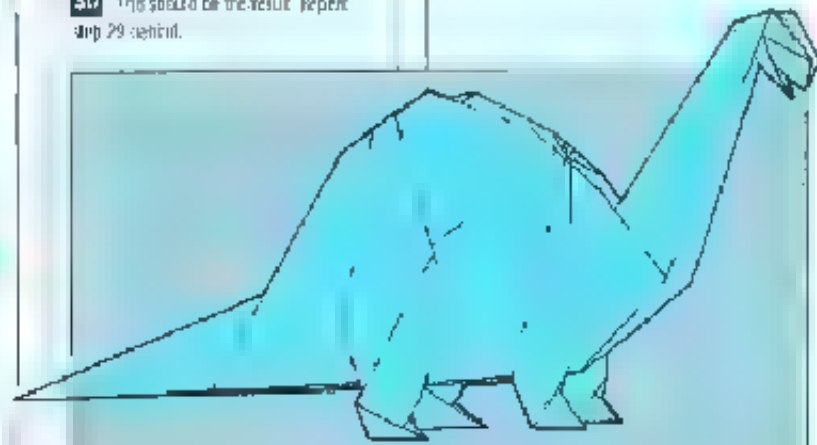
29 Outside reverse fold the back leg, arranging the paper into the position shown in step 30.



30 This should be the result. Repeat step 29 behind.



31 Round off the back with mountain folds. Repeat behind.



32 Now it's time to add the details.

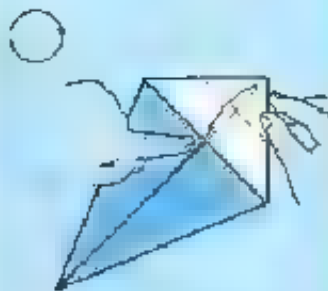
PTERAMODON

FUMIAKI
KAWABATA

This is a very challenging piece of origami, and is best not attempted until you have a good understanding of the various origami procedures and techniques.

As always, follow the illustrations very carefully

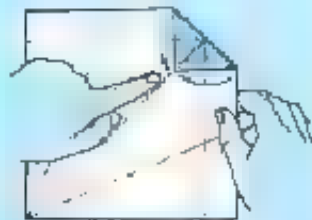
USE A 15" x 20" SQUARE SHEET OF WHITE PAPER



1 Begin with a white base (see page 36, steps 18 and 19). Valley-fold the top point down to meet the adjacent edges, thereby



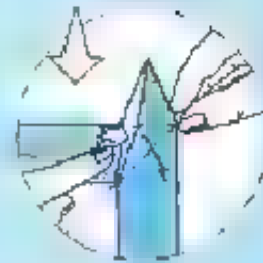
2 Flatten a triangle, undo the top and bottom flaps of paper



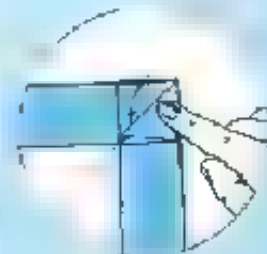
3 Valley-fold the top edge and right-hand side over as shown, thereby making two bands of paper



4 Release the triangle from underneath the bands of paper, thereby making a triangular top



5 Open up the top and squish it down neatly



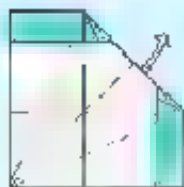
6 into a preliminary fold.



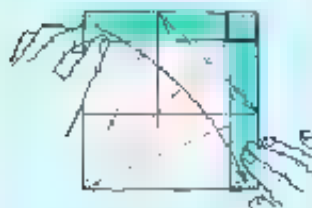
7 Mountain-fold the preliminary fold behind along the line where the sloping fold-lines intersect with the top edge and right-hand side



8 Valley fold the bottom edge and the left hand side over as shown. Press them flat and unfold them.



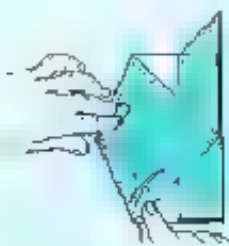
9 Bring out the preliminary fold from behind.



10 Valley fold the paper in half from top-left to bottom-right.



11 Open out the bottom section of paper squashing it down neatly into the position shown in step 2, thereby making a flap.



12 Along the existing fold-line, valley fold the flap's bottom sloping edge flat. Press it flat and unfold it.



13 Along the existing horizontal fold line open out the flap's lower section of paper flat.



14 Squash down neatly as shown.



15 Inside reverse fold the flap bottom section of paper thereby making a diamond-like shape.



16 Inside reverse fold the diamond's bottom corner as shown.



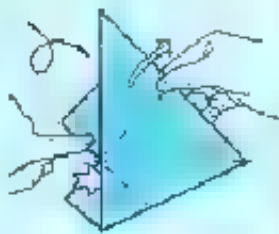
17 valley fold the diamond-like shape in half from top to bottom



18 Repeat step 17 with the flaps up sloping edge



19 Repeat steps 13 to 17 with the flap's upper section of paper



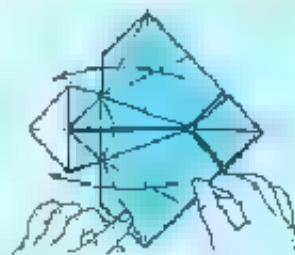
20 Turn the model over. Pull the triangular flap over towards the right, thereby rearranging the bottom layers of paper



21 Open out the triangular flap, squashing it down neatly into the position shown in step 2.



22 As far as possible, valley fold the left-hand layers of paper over to the right.



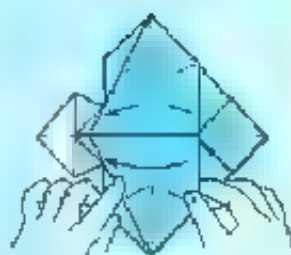
23 valley fold the right-hand flaps of paper over to the left on a line between the top and bottom points



24 Pull out the left-hand bands of paper, releasing them from underneath the vertical folded edge, thereby making two flaps



25 valley fold the flaps over to the right as shown.



26 Valley fold the flap over toward the left on a line between the top and bottom points.



27 Valley fold the right and left flaps over to meet the flap's left-hand side, thereby making a triangle.



28 Working from both sides, the triangle's top and the preliminary bottom edges together along the middle vertical line, pressing the base of the triangle into cells.



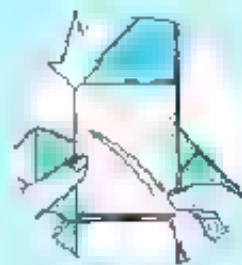
29 Open the right side of the model but in front of the underneath section of paper with a mountain fold, at the same time.



30 Doing the preliminary fold swing across to the right.



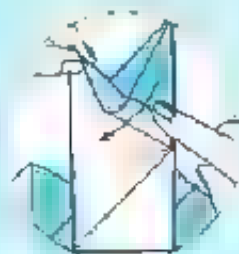
31 This should be the result. Press the upper part.



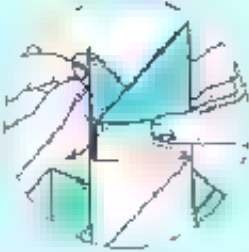
32 Valley into the flap flap's bottom right-hand corner over as shown. Press it flat and unfold it.



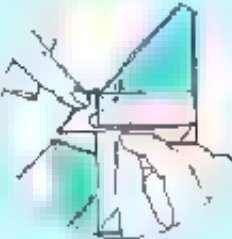
33 Along the fold-line made in step 32, make reverse fold the upper flap's front layer of paper at the same time.



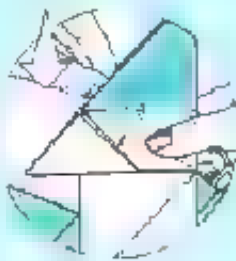
34 Bringing its bottom left-hand corner into the pocket shown. Press the paper down neatly, thereby.



35 making a triangular point. Inside reverse fold the point so that its sloping edge lies along the adjacent horizontal edge.



36 inside reverse fold the triangular point's adjacent corner.



37 Again, inside reverse fold the corner. The upper flap will have to be opened out for this step to take place.



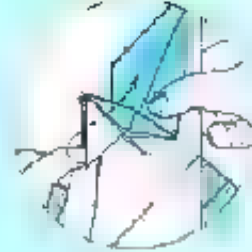
38 As far as possible, valley fold the upper flap's front sloping edge over.



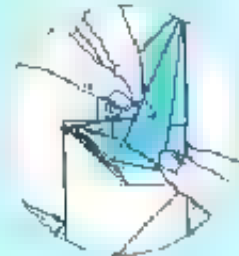
39 Inside reverse fold the triangular point.



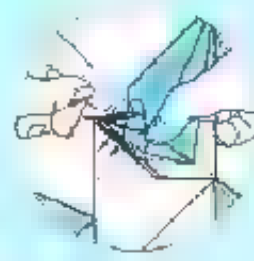
40 Again, inside reverse fold the triangular point.



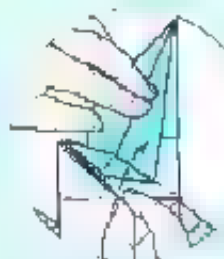
41 Once again, inside reverse fold the triangular point.



42 Finally, inside reverse fold the triangular point as shown.



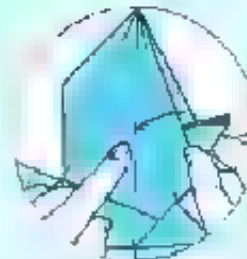
43 Form one set of front corners with inside reverse folds.



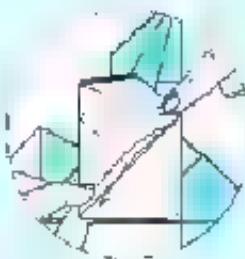
44 valley fold the front claws up



47 pushing the flap's side across. Press the paper down, adjusting the position shown in step 48



50 valley fold the claws over so that the adjoining sloping edges lie along the adjacent fold-line



45 valley fold one of the upper flap's bottom edges over as shown. Press it flat and unfold it



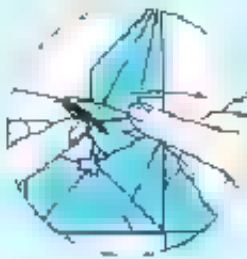
48 valley fold the front claws down



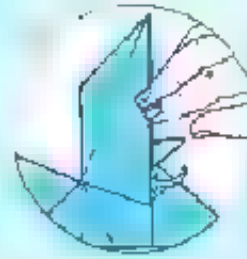
51 mountain fold the claws behind as shown, inserting



46 Along the foldline made in step 45 refold the bottom edge at the same time



49 valley fold the claws over to the right



52 pick up the model and in the process making a wing. Repeat steps 32 to 52 with the lower flap thereby making



53 another 5-4 cm (2-1 1/2 inch) and a wing.



54 Turn the model over from top to bottom. Working from the right-hand side point, bring the top and bottom sloping edges together along the middle valley, pressing them



55 down really into collars.



56 Release the flap from



57 underneath the collars.



58 Insert the top's left-hand side point into the model with a mountain fold as shown.



59 Inside, reverse fold the flap's top and bottom left-hand points.



60 On the front flap of paper, make the mountain and valley folds as shown, thereby



61 bringing the top and bottom left-hand horizontal edges together.



62 Press the paper down, thereby making a triangular flap.



63 Sink the bottom horizontal edge into the model as is shown.



64 Valley fold the triangular flap down along the middle fold-line. Repeat step 63 with the top horizontal edge.



65 Open out the triangular flap at the same place.



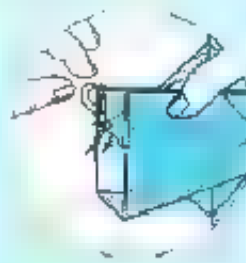
66 Flattening out the top point, squash the flap down neatly.



67 Into the position shown.



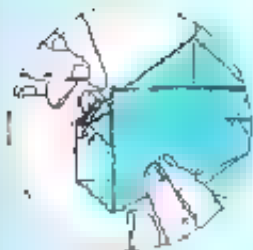
68 Make reverse fold the flap's top sloping edge along the line of the horizontal edge behind.



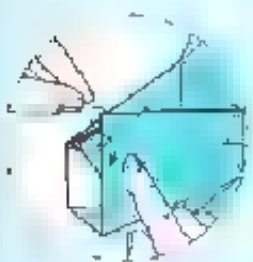
69 Make reverse fold the flap's left-hand corners as shown.



70 Again, inside reverse fold the corner.



71 Once again, inside reverse fold the flap.



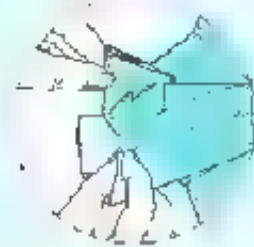
72 Inside reverse fold the flap's outside point as shown.



73 Swing the reversed corners towards the opposite side by step folding. Press them down neatly into the



74 Open the side flaps slightly.



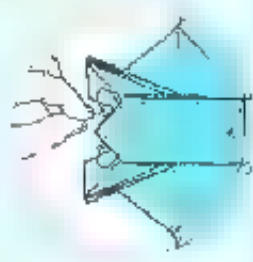
75 Make the valley and mountain folds as shown.



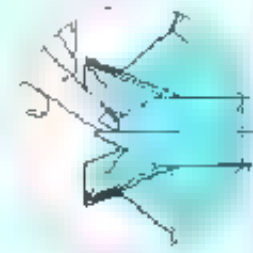
76 Press the sides down neatly thereby forming one set of back claws.



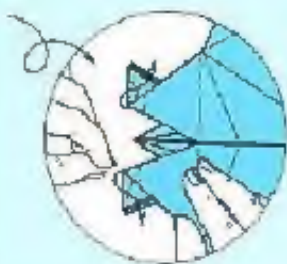
77 Repeat steps 68 to 76 with the flap's bottom sloping edge thereby making another set of back claws.



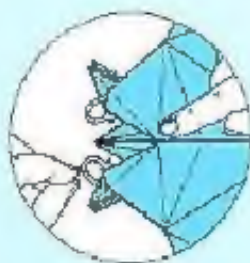
78 Shape the head with mountain folds.



79 This should be the result.



80 Turn the model over from top to bottom. Inside reverse fold the topmost layer of each set of back claws.



81 Mountain fold the topmost layer of each set of back claws behind, at the same time.



82 Inserting it in front of the adjacent layer of paper.



83 Release the preliminary fold's front flap of paper.



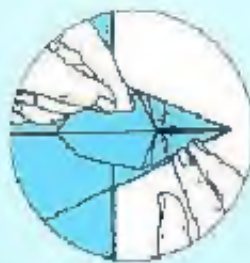
84 Pull and lift up the preliminary fold's front flap of paper. Take it over to the right, petal folding it as shown.



85 Valley fold the petal fold in half from right to left, thereby making the head.



86 Working from the right-hand side point, valley fold the top and bottom sloping edges over to lie along the middle fold-line.



87 Shape the eyes with valley folds.



88 Valley fold the model in half from bottom to top.



89 Outside reverse fold the topmost folded point downwards, thereby making the lower jaw.



90 Shape the lower jaw with an outside reverse fold.



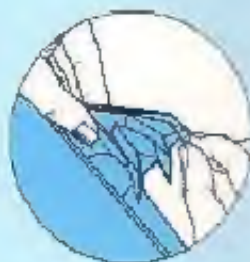
91 Shape the top jaw with an outside reverse fold, at the same time.



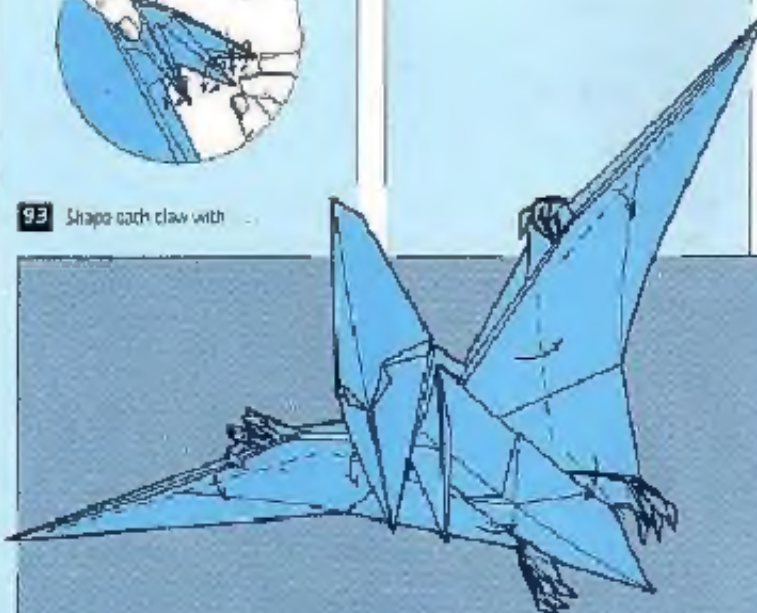
92 Letting the head and eyes swing up into place.



93 Shape each claw with



94 an outside reverse fold.



95 Shape the wings with valley folds, thereby completing the premonition. Open and close the wings to make the jaws move.

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ORIGAMI

IN THE MODERN WORLD